THE SCHOOL REVIEW

A JOURNAL OF SECONDARY EDUCATION

VOLUME XXIX JUNE, 1921 NUMBER 6

Educational News and Editorial Comment

FAILURES OF HIGH-SCHOOL STUDENTS IN THE FRESHMAN YEAR OF COLLEGE

A great deal of publicity has been given during recent years to the statement that the state universities have dropped a large number of Freshmen in the early months of their college careers because of their inability to do satisfactory college work. The newspapers which have reported this statement have pointed out that the universities are overcrowded and that they are adopting this method of making a drastic selection among the Freshmen who come in such numbers that it is well-nigh impossible for the institution to handle them. President Birge of the University of Wisconsin was stimulated by this kind of report in the public press to make the following statement:

> The total number of Freshmen "dismissed" from the University of Wisconsin at the end of the first semester this year approximated 115, out of a Freshman registration of 2,240; that is to say, about 5 per cent. A considerable number of the students thus dropped—probably about one-half—are so-called "hold-over" Freshmen, that is, Freshmen whose work was unsatisfactory last year and who had been continued on probation in order to give them another opportunity. Probably, therefore, between 2 and 3 per cent of the students who entered the university in the fall have made records so poor that the university does not think it wise for them to continue

attendance any longer. This is about the usual number; certainly it was no larger this year.

But many more students leave the university than are "dismissed," for the percentage of students who enter the university as Freshmen and continue through until they graduate is not essentially different from the corresponding number in the high schools. Statistics show that the Senior class in the high school in Wisconsin numbers less than one-half of the students who entered high school as Freshmen. In the university the percentage of Seniors is higher, ranging from 70 to 80 per cent of the corresponding Freshman class, or even more; but this high percentage is in considerable measure due to the large number of students who come to the university from other institutions with advanced standing. Probably not more than one-half of the Freshmen who enter in any year complete a course for graduation.

Most of the notably successful students complete the course, and a very large part of those who leave are reaching little success in their studies. Most of those who thus fall out do so voluntarily and are not "dismissed." But their lack of success is, nevertheless, one of the important reasons for their leaving school; and this statement is equally true of high school and college.

Replying to "what the high schools should do," Dr. Birge said:

The preparation of students for higher education is one of the "major industries" of the high school. The number of high-school graduates who continue with advanced studies is, I believe, larger than most people think. In 1919, the university received about 1,800 Freshmen from Wisconsin; the colleges of the state received about 1,600 Freshmen, mostly from Wisconsin; the normal schools probably took in as many as 1,500 high-school graduates. Thus more than 4,500 Wisconsin students entered higher institutions within the state, besides a great many who went to college or normal school outside. At a very moderate estimate from one-third to one-half of our 8,000 to 9,000 high-school graduates continue study after graduating.

I was told last year that there was no use asking the high-school students in March whether they were coming to the university in September, because it was so early that many would not have decided. Such students are not and cannot be really *prepared* for college and are correspondingly likely to fail.

High schools can urge students to plan for college, to take a course which definitely prepares them for college, and to work hard on these studies. The student who is to go on with four years of study after high school is in a different situation from one whose high-school course is his last regular schooling. Both types need the considerate and intelligent guidance of their teachers.

Students should understand that they usually waste their own time and their parents' money if they *drift* into college. Those profit by college who are following a plan clearly marked out and energetically executed. Students should be made to feel that the state is expending large sums of money in

providing higher education for ambitious and successful students; that a *student* is one who studies; and that study means hard work every day. If high-school boys and girls are unwilling or unable to pay this price for a higher education, they should not go to college at all; still less should they expect the state to invest money in their half-hearted attempts at college education. It is the business of the high schools to advise such students not to go to college. It is even more their business to send on to college all eager, hardworking, and intelligent students, for in these lies no small part of the future of the state.

THE JUNIOR COLLEGE

The fourteenth meeting of the National Conference Committee on Standards of Colleges and Secondary Schools dealt at length with the junior college. It found that this institution must be defined with discrimination and that very often it fails to fulfil the requirements which are necessary to justify the use of the term college.

The full report on this matter is as follows:

The junior college is an institution covering the first two years of a standard college course, based upon the completion of four years of high-school work. It may be a division of a large university offering a full college course but for administrative reasons dividing that course into two separate units, each covering two years of work; it may be a separate institution, either rural or urban, under private or public control, established primarily either to meet local needs for post-high-school work, whether vocational or cultural, or to allow students to take the early years of their college course near their homes or in a comparatively small and closely supervised environment; it may be a graduate annex to a local high school organized primarily to gratify local pride or to aggrandize the local school system.

There are over a hundred such institutions in the country at present, and there is a marked tendency to increase the number. The institution has had its greatest development in the West and South, but it exists in all parts of the country, and the movement is general rather than local or regional.

In many cases the junior college meets a genuine need. It serves in a measure to relieve the enormous pressure of students on many of our universities, and by relieving that pressure helps to solve the troublesome problem of the assimilation of the Freshman. It lightens the financial burden for many students by allowing them to take the first half of their college course at less expense than in a distant institution. For many it affords the opportunity at home and at small cost to pursue vocational or pre-professional studies that otherwise they would be unable to afford.

Since it thus meets definite needs, it is evidently here to stay, and the problem is not whether we shall have junior colleges, but how far they shall be encouraged, what standards shall be insisted on, and how far work done

in them shall be accredited by standard colleges, by professional schools, and by universities.

It may be set down as a safe working principle that junior colleges should be encouraged in so far as they meet genuine, legitimate needs, and that their work should be accepted and accredited in so far as it conforms to the standards maintained by colleges and universities of recognized standing. This means that the institution must possess at least the minimum collegiate equipment, that the teachers must be of collegiate calibre, men and women of scholarly attainment, that the work must be done under college conditions, and that the atmosphere must be distinctly collegiate rather than secondary in character. In other words, the work done in junior colleges must be recognized at its face value just as far as, and no farther than, it conforms to the standards of our recognized institutions.

The junior college as a division of a large university may be an administrative device of great value, but the institution in this form is something with which we are not particularly concerned at present.

The rural junior college may serve a very useful purpose, and it would undoubtedly be for the best interests of this country if many of the small institutions, with weak resources, which are vainly struggling to maintain themselves as second- and third-rate colleges would frankly recognize the situation, give up the struggle, limit their field, and make themselves into first-rate junior colleges, sending their students on to earn their degrees in standard institutions.

Some of our cities maintain strong and well-equipped municipal colleges and even universities, and there is no reason why, if a local need exists, a larger number should not maintain junior colleges. It must be emphatically asserted, however, that if such an institution is to claim collegiate standing and collegiate recognition, it must maintain collegiate standards. It must ordinarily be a separate institution, with its own building, its own president, and its own faculty. It must possess adequate library and laboratory facilities for work of college grade. Its faculty must have higher scholarly attainments than the minimum necessary for successful high-school work, and a reasonable proportion of the staff should have had experience in college teaching. The number of teaching hours required of them must be smaller than are ordinarily called for in high schools, in order that they may have opportunity for proper study and preparation. The method of instruction should be collegiate rather than secondary, and the atmosphere should be the same.

The extension of a high-school course by the addition of one or two years of more advanced work may meet a genuine local need, but such an annex to a high school is not necessarily worthy of collegiate standing. In general, it may be said that such an institution, with the high-school principal becoming the president of the college, with certain of the high-school teachers taking over the work of instruction, and carrying it on with the high-school facilities, does not deserve to be called a college, and should not be recognized as such.

COLLEGE-ENTRANCE REQUIREMENTS

A second matter considered by the National Conference Committee on Standards of Colleges and Secondary Schools was presented in an elaborate paper by Mr. Clyde Furst, secretary of the Carnegie Foundation. Mr. Furst gave a general summary of the changes which have taken place in college-entrance requirements since 1912 in 125 institutions. His general summary is of such importance in defining the current relations between secondary schools and colleges that it is quoted in full as follows:

Requirements in 1912 and in 1920 for entrance to candidacy for the bachelor's degree in liberal arts, as shown by a study of the conditions in 125 universities and colleges that were approved by the Association of American Universities in 1918, disclose the following tendencies:

1. The number of institutions having but one requirement for the various bachelor's degrees in liberal arts increased from 70 to 77, that is, from 56 to 61 per cent of the entire 125.

2. The number of requirements for entrance that demand 15 units of preparatory work increased from 91 to 145; that is, from nearly one-half to more than three-fourths of the total of 189 requirements.

3. The total number of units required for entrance in the 125 institutions increased from 2,786 to 2,834; that is, 13 per cent.

4. The number of units prescribed as to subject decreased from 2,025.5 to 1,268.5; that is, from 72 to 44 per cent of the whole number, a decrease of 37 per cent.

5. The number of units left entirely free as to subject increased from 101 to 348.5; that is, from 3.6 to 12 per cent of the whole number.

6. The number of elective units increased but slightly, from 659.5 to 697.5; that is, from 23 to 24 per cent of the whole.

7. A comparatively new feature, alternate requirements; that is, units to be taken in either Latin or Greek, mathematics or chemistry or physics, and so on, has come to include, in 1920, 519.5 units, or 18 per cent of the whole.

8. Both in 1912 and in 1920 the 49 institutions of the North Central Association of Colleges and Secondary Schools required, on the average, the largest number of units for college entrance; the 28 institutions of the Association of Urban Universities came next; the 31 institutions associated with the College Entrance Examination Board next—all three representing requirements above the average of the whole 125 institutions, both in 1912 and 1920; these requirements were, respectively, 15.03, 14.01, and 14.79 units, as compared with an average of 14.74 in 1912; and 15.07, 15.06, and 15.03 units, respectively, as compared with an average of 14.98 in 1920.

9. The 31 institutions represented in the National Association of State Universities and the 17 of the Association of Colleges and Secondary Schools

of the Southern States have an average requirement lower than the general average in 1912, namely, 14.67 and 14.38, respectively, but in 1920 both had an average requirement higher then the general average, namely, 15.01 and 15 units, respectively.

10. The 28 institutions represented in the Association of Colleges and Preparatory Schools of the Middle States and Maryland, the 21 represented in the New England Association of Colleges, and the 10 in the New England College Entrance Certificate Board, required, on the average, a number of units for entrance smaller than the general average, both in 1912 and in 1920, namely, 14.58, 14.58, and 14.28 units, respectively, in 1912 and 14.92, 14.86, and 14.63, respectively, in 1920. Both in 1912 and 1920 the institutions associated with the New England College Entrance Certificate Board required, on the average, the smallest number of units for entrance. This group alone had, in 1920, a smaller average requirement than the general average in 1912.

11. With regard to prescribed subjects, the institutions associated with the Middle States, the Entrance Examination Board, and the two New England groups had, on the average, larger requirements than the general average, both in 1912 and in 1920. The State Universities and the North Central Association had, on the average, smaller requirements than the general average, both in 1912 and in 1920. The Southern Association and the Urban Universities averaged more than the general in 1912 but less in 1920.

12. With regard to alternate requirements, which are specified only for 1920, the Middle States, Examination Board, Urban Universities, and the two New England groups have larger, the Southern, North Central, and State Universities groups, smaller requirements than the average.

13. With regard to electives, the State and the North Central institutions had more than the average, and the Middle States, the Urban Universities, the Examination Board, and the New England Certificate group had less than the average, both in 1912 and in 1920. The Southern institutions had less than the average in 1912 and more in 1920. The New England Association institutions had more than the average in 1912 but less in 1920.

14. With regard to free units the Southern, Examination Board, and the New England groups offered nothing in 1912, and their allowance was below the average in 1920, as was the offering of the Middle States in both years. The State Universities were below the average in 1912 but above in 1920. The Urban and North Central groups were above in both years.

15. In summarizing the relative frequency of the various subjects, some ratio of evaluation between prescribed, alternate, and elective units is necessary. In the following comparison this ratio has been taken, as one, one-fourth, and one-seventh, the average alternate group containing four subjects, the average elective group seven.

16. The most frequent entrance subjects, considering prescriptions, alternates, and electives, all together, are thus English, Mathematics, Latin; the History, Civics, Economics group; German, French, Greek, Spanish, Physics, Chemistry, Business, and Botany, in the order named.

17. The most frequent subjects among prescriptions alone are English, Mathematics, Latin, the History and Civics group, and General Science.

18. The most frequent alternate subjects are French and German, Latin, Greek, and Spanish.

19. The most frequent electives are German, History and Civics, French, Latin, Greek, and Mathematics.

THE JUNIOR HIGH SCHOOL

At the last meeting of the North Central Association a committee of the Commission on Secondary Schools wrestled with the problem of defining the junior high school and supplying the Association with the standards on which an approved list could be based. The committee found that junior high schools are so different in character that no single name adequately covers all the cases. They, therefore, adopted in much of their discussion a negative designation for these schools, referring to them as non-8-4 schools. After attempting to define this new institution, the committee decided that it would be a hindrance at the present time rather than a help to the movement to set up a system of standards. The whole matter was therefore postponed for a year, but in the meantime a conference was held to discover the opinions of such members of the Association as were interested to attend this special conference. The following report was issued after the conference had canvassed the various matters that were presented by the committee:

This conference revealed a high degree of uncertainty and confusion concerning the organization of junior high schools. A similar degree of uncertainty and confusion was reflected in the reports which the committee received from schools which have undertaken some form of reorganization. Following this conference and the examination of the questionnaires returned by the junior high schools, the committee met and formulated the following recommendations:

1. The secondary school should be a unit in the educational system and should include Grades VII to XII. Following the presentation of this report, the committee was instructed by the Association to consider its work in terms of a secondary-school period beginning with the seventh grade and continuing to the third year of the present college organization.

2. For purposes of administrating efficiency, these grades may be organized on the basis of the three-three plan, the two-four plan, the four-two plan, or the six-year plan as local conditions warrant.

3. Under usual conditions a school system with fewer than five hundred pupils in Grades VII to XII should not attempt to organize on the basis of more than one unit, provided these grades are housed in one building.

4. Under usual conditions a school system with considerably more than five hundred pupils should organize the secondary school into two units.

5. Ultimately the training of all teachers of academic subjects in Grades VII to XII should be the same as that fixed by the North Central Association for teachers in accredited high schools.

6. In its curricular offerings, a school should present a range of work in the seventh and eighth grades which is more extensive than that offered in the traditional school, and provision should be made for some pupil choice of subjects.

7. In the administration of the program of studies in Grades VII and VIII, provision should be made for: (*a*) at least partial departmentalization of instruction, (*b*) promotion by subject, (*c*) pupil collateral activities supervised by school authorities, and (*d*) some form of supervised study, either by teachers in the classrooms or by trained, experienced supervisors in larger study halls.

8. In the administration of the school, provision should be made for: (*a*) recitation periods of not less than thirty-five minutes, exclusive of all time used in the changing of classes or teachers, (*b*) a teaching load of not more than thirty periods per week of forty minutes each, and (*c*) a number of pupils per teacher based on average attendance of not more than thirty.

The committee is of the opinion that the junior high school movement is of too recent origin to warrant the adoption of standards for accrediting. In fact, the committee is of the further opinion that any effort to standardize junior high schools at this time would be productive of much harm. However, the committee feels that the Association can and should contribute to the direction of the junior high school movement through studies based on actual practices and through conferences held in connection with the annual meeting of the Association. The committee of the Commission on Secondary Schools is planning to co-operate with a special committee of the Commission on Units, Courses, and Curricula in further studies of the junior high school problem and in planning a conference for this next year. The committee is convinced that the aims and purposes of the junior high school, its curricula, the method and treatment of subject-matter, the making of adequate provision for individual differences, and the development of pupil collateral activities, are the vital questions that need much study to the end that the best practices may be discovered and may be more generally adopted.

A NEW TYPE OF COLLEGE WORK

The *New York Evening Post* gives in two of its educational summaries accounts of experiments that are to be tried at Antioch College and Bryn Mawr aiming to develop a closer relationship between the work of liberal arts colleges and the industrial world.

Antioch College came into prominence in the educational history of Ohio through the efforts of Horace Mann, who was its first president. Since those early years it has gone through the various evolutions which marked the careers of the small colleges of Ohio. It had at the beginning of its history an equipment which in the earlier days was adequate for a liberal arts course, and it had a student body large enough to justify its efforts, but in recent years the attendance of students has been very small and it has been impossible to keep up the library and laboratory equipment necessary for a full series of modern courses. A number of manufacturers from Dayton became interested in the college at this stage in its declining career and have taken over the whole plant with a view to organizing an entirely new kind of institution.

Arthur E. Morgan, an engineer, has been made president of the college. Mr. Morgan has long been interested in introducing into schools constructive work which shall change the character of education from purely academic studies to a broader outlook on material facts and social relations. He is preparing to set up on the campus of Antioch a number of manufacturing establishments in which students are to work at the same time they are pursuing their college studies. He is also going to take advantage of the industries of the neighboring cities to carry on the same program. Some of the statements which he makes about his work are quoted in the article in the *New York Evening Post*.

> It is the aim to unite the fundamentals of a cultural education with the essentials of professional or technical education, so that while the student is becoming fitted for effective work in a profession or other vocation he or she at the same time will be prepared for effective citizenship. Our technical schools too frequently confine their teaching to the technique of a particular calling, leaving the student sadly unprepared in the culture, knowledge, and outlook needed by every person as a preparation for effective living.
>
> It is the aim to help the professional or technical student to the mastery both of the theory and of the art of his prospective calling. It is the custom of most professional and technical schools to train the student almost solely in the theory and the accumulated information concerning his calling, leaving him to pick up the art of actual accomplishment after he leaves school. It is the lack of the practical mastery of his calling which commonly makes the professional or technical student so ineffective and helpless upon graduation, and which so commonly results in his spending several years, sometimes of

nearly wasted effort, in finding himself. To assist the student to such practical mastery at the same time that he is learning the theory of his calling the Antioch program provides that the professional or technical student may spend half his time at school and half in practical work, as nearly as possible along the lines of his proposed calling. To this end the students will alternate between a month at school and a month at work.

Co-operation has been arranged with nearby industries for the employment of students on this half-time basis. There are five hundred industries within thirty miles of Antioch, though the college itself is in a quiet village half hidden among the trees. As fast as arrangements can be matured, it is planned to construct a factory building on the college campus, in which will be located a number of small industries where the students will be engaged in the various phases of industry. A part of these industries already have been chosen, but there still are a number of openings for others of particular value and promise to locate at the college. These may be going concerns that come because of the advantages offered there or they may be new industries. To be acceptable, an industry should demand workers of high intelligence, so that the students will not have to compete with unskilful and unintelligent labor; it should have high educational value for the workers, and should supply a product for which there is a reasonably uniform demand.

Antioch is blazing a new path in American education. Students, teachers, and trustees will be pioneers together in working out its destiny. The entire country is being searched for a faculty of men and women who have the courage, vigor, originality, and vision to bring these hopes to fruition; and a board of exceptional trustees is giving the keen personal interest necessary to insure success. Intelligent young men and women of virility, initiative, and the pioneering spirit will find in these first years an opportunity for personal associations and for development which scarcely can be equalled in later years, when the routine is thoroughly established. Available places in the student body must be saved for this type. Boys and girls who demand a perfection of routine are referred to various other educational institutions, where the same things will happen next year that happened last, and where there is no danger of disturbance from new ideas or from pioneer conditions.

The experiment of Bryn Mawr is of a different character from that at Antioch. The college plant which has heretofore been unused during the summer is to be turned over to young women who come in from the industries and wish to have some of the advantages of a higher education but are unequipped with the preparation ordinarily required for admission to Bryn Mawr. The statement made by the Bryn Mawr authorities is as follows:

The school will open on June 15. The subjects offered will be those requested by the students. For the first summer the students may choose

among the following: English, written and spoken; literature, history, economics, government, labor movements and problems, industrial organization, elementary law, physiology and hygiene, community life, origin and evolution of the earth and of life, public speaking, and appreciation of art.

The mornings, all but one hour, will be devoted to lectures and discussions. In the afternoons there will be two hours of conference and preparation. The rest of the day will be filled with typical college activities. There will be plays and entertainments, with the necessary hours of preparation involved. The library will offer a cool summer retreat to the more studiously inclined.

Field athletics, training in the gymnasium and dancing under the stars on its roof; swimming in the pool, and country walks—all will help to fill the summer days. A group of alumnæ of the college will live in the dormitory and share the athletic and social life of the summer students.

Scholarships of $200 each will be provided by trade unions, through working girls' clubs, or from a scholarship fund for women wishing to avail themselves of the opportunity who might otherwise be prevented from attending school. Organizations of women workers may offer additional stipends to include travelling expenses to and from the school if the student comes from a distant section of the country. These scholarships will be open to women from any section of the United States and from any trade. In each case the scholarships will be awarded through local committees established in various centers throughout the United States co-operating with the central Scholarship Committee.

To be eligible as a candidate, a woman must be able to read, write, and speak English, and preferably have a grammar-school education. "From twenty to thirty-five years is the most desirable age for candidates," says the official statement, "though girls as young as eighteen years will be accepted if they show special qualifications."

Bryn Mawr does not intend to direct and control this new venture in "workers' education"; the college merely creates the opportunity. As the official statement says:

"Bryn Mawr offers her equipment and assists in making it financially possible for qualified women to take advantage of it. At this point she ceases to act alone, and the undertaking becomes a joint one, to be developed by the best minds in labor and educational circles. It is a matter of free give and take. The summer students will bring into the scholastic atmosphere of the college a breadth of outlook, a depth of living experience that it could acquire in no other way. Whole new vistas of interests and understanding will be opened to those fortunate alumnæ who are chosen to act as tutors and assistants this summer. The new students, on the other hand, will be able for two months to enjoy an opportunity of living and thought hitherto denied them by the relentless pressure of the industrial system to which they have been subject; it is conceivable that the entire future of some of these students may be fundamentally changed by this eight weeks' excursion into a new world."

News Items from the School of Education of the University of Chicago

SUBSIDIES FOR INVESTIGATIONS

The newest foundation, namely, the Commonwealth Fund, has recently established a research committee which is to have $100,000 a year to expend in educational research. The method of operation of this committee is to select educational investigators in different institutions and to give them the necessary funds for carrying on research. The laboratory of the Department of Education has contributed in recent years a number of notable studies in reading. The method employed in making these studies is that of photographing the eyes of children and adults during the process of reading. So significant are the results that have already been secured that the Commonwealth Fund has given the educational laboratory of the University of Chicago a subvention of $15,000 for this calendar year to push forward these investigations. This will make possible a material enlargement of the equipment for photographing the eyes, and several members of the staff of the School of Education will devote a part of their time during the coming year to special researches in reading.

Under a second appropriation from the Commonwealth Fund, test material is being prepared for a scrutiny of the results of modern-language teaching, particularly as exemplified in the field of French. This investigation is under the general supervision of Professor Morrison, Superintendent of the Laboratory Schools. The material is being prepared and administered by Arthur G. Bovée, of the French Department of the University High School, with the collaboration and advice of other members of the Department. Statistical treatment of the data will be in the hands of Karl J. Holzinger, of the Faculty of the College of Education. It is hoped that the investigation will throw some light on the

following questions: To what extent do students learn to react to the thought of spoken and written discourse in the French language? To what extent do they learn to use the foreign tongue in expressing their own thoughts? What relation is there between knowledge of grammatical principles and (*a*) ready reaction to meaning and (*b*) facility in grammatical usage. What differential learning characteristics seem to be disclosed in terms of age of students? The Laboratory has available subjects ranging in school grade from the fourth grade to university Freshmen and from age nine to full maturity. What relation is there between vocalization and effective language learning? Exploration of this field depends somewhat on the possibility of devising an effective instrument for gauging the grade of vocalization.

THE NEW YORK SURVEY

A committee of twenty-one, representing the various farm organizations and women's organizations of New York state, began an agitation a year ago for a survey of the schools of the villages and rural districts of New York state. This survey is to cover such matters as the training of teachers, the organization of the course of study, and the relation of these districts to the State Department of Education at Albany. The committee finally secured the necessary funds for a state-wide survey, and organized an executive committee consisting of representatives of Cornell University and the State Department of Education. This executive committee in turn has employed a staff of educators who are to make the survey. For the division dealing with school supervision and administration the Department of Education of the University of Chicago was asked to supply experts. Professor Judd and Professor Bobbitt have been put in charge of this division of the survey. Two of the graduate students in the Department are now in Albany co-operating with Professor Judd and Professor Bobbitt in working up the detailed information. Professor Bobbitt spent the Winter Quarter in Albany and in visiting the various school districts throughout the state. Professor Judd will spend the month of September in New York. He is in Albany frequently for purposes of consultation and investigation.

WHERE TO ESTABLISH JUNIOR COLLEGES

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THE PROBLEM AND THE METHOD OF STUDYING IT

The need for establishing junior colleges may still be open to question. What is presented here bears only upon the feasibility of instituting these new units. This problem of feasibility has two chief aspects, that of the source of the student body and that of adequately financing the work. We are concerned here only with the former aspect. The question upon which this study presumes to shed light may be put as follows: How large must be the enrolment of a high school and the population of the community which it serves in order that the school authorities may establish junior-college work with assurance that the requisite student body will be at hand to avail themselves of its opportunities?

The interdependency of the two aspects of the problem as stated—enrolment and finance—is frankly admitted, as is also the impossibility of saying the final word on the former without facts on the latter. This study, to have fullest significance, should be followed by one concerning costs. The aspect here studied is, however, deserving of separate investigation.

The data presented concern the enrolment in the first two years of higher institutions of the graduates of high schools in the North Central states. The facts were ascertained by means of a blank of inquiry directed to the principals of high schools in communities representing a wide range of population—from small villages to cities of good size. In addition, the selection included a large number of cities in which there are no colleges and a smaller number having such higher institutions. The latter were included in order to determine the influence of the presence of higher institutions on the proportions of high-school graduates likely to attend them.

The blank form called for the figures on enrolment during the academic year 1920–21 by years (first or second years of higher institutions only), by sex, and by line of work ("regular college work," pre-medic, pre-legal, the several engineering groups, architecture, dentistry, pharmacy, business, normal, education, agriculture, home economics, music, and other arts; blank spaces were provided for reporting the enrolment in other fields). Other data requested were the number in the high-school graduating classes of 1918–19 and 1919–20 and the enrolment of the high school (Grades IX–XII) in 1919–20. Principals were requested to report all their graduates "who are this year enrolled . . . . irrespective of the year of graduation from high school." For the purposes of the study a higher institution was defined as "one which requires for admission high-school graduation or its essential equivalent in earned units of credit."

TABLE I

DISTRIBUTION OF GRADUATES OF 82 HIGH SCHOOLS ENROLLED IN THE FIRST TWO YEARS OF HIGHER INSTITUTIONS

LINE OF WORK	FIRST YEAR			SECOND YEAR			BOTH YEARS		
	Men	Women	Total*	Men	Women	Total*	Men	Women	Total*
Liberal arts	672	633	1,331	518	470	1,007	1,190	1,103	2,338
Engineering	183	2	198	157	5	172	340	7	370
Architecture	7	1	8	7	.....	7	14	1	15
Dentistry	34	5	39	35	4	39	69	9	78
Pharmacy	11	1	12	9	2	11	20	3	22
Business	60	28	89	51	13	67	111	41	156
Agriculture	53	.....	55	49	3	52	102	3	107
Home economics	.....	35	35	.....	28	28	.....	63	63
Normal	38	224	264	20	147	170	58	371	434
Nursing	.....	11	11	.....	10	10	.....	21	21
Military and naval	3	.....	3	2	.....	2	5	.....	5
Physical education	.....	6	8	.....	1	1	.....	7	9
Music	5	45	51	.....	31	32	5	76	83
Other arts	6	19	26	5	11	16	11	30	42
Miscellaneous	7	2	10	6	3	9	13	5	19
Total	1,079	1,012	2,140	859	728	1,623	1,938	1,740	3,763

* The figures in this column are in some instances in excess of the sums of the figures in the pairs of columns immediately preceding because one school reported totals without dividing by sex.

As it was anticipated that only a small proportion of high schools would keep records of the sort needed to fill out the blank,

some hundreds of the inquiries were sent out. Approximately a hundred containing data of some sort were returned, eighty-two of these from thirteen states proving usable. Illinois was represented by eleven schools, Indiana by eleven, Kansas by seven, Michigan by eight, Minnesota by eighteen, Ohio by ten, and Wisconsin by eight. The remaining schools were in neighboring states.

The first seven of the eight tables assembled from the data supplied, for reasons that will become apparent as the article proceeds, fall into three groups. Table I shows the distribution of all students enrolled in the first two years of higher institutions by line of work pursued, by sex, and by years; Tables II–V show the numbers and proportions in all lines of work in higher institutions by size of enrolment of high school, by size of graduating class, and by population of the communities in which the high schools are located. Tables VI–VII show the numbers and proportions in regular college work only by size of high-school enrolment and by population of community.

A. DISTRIBUTION BY LINE OF WORK, YEAR OF WORK, AND SEX

A total of 3,763 of the graduates of the 82 high schools reporting are enrolled in the first two years of work in higher institutions—an average of about 46 per high school. This large number is seen in Table I to be widely distributed as to the lines of work being followed. "Liberal arts" as here tabulated includes those in "regular college work" as well as pre-medic, pre-legal, and education (not normal-school) students. This group is seen in Table I to be by far the largest, including 2,338 of the total. Of this number only 235 are in the three supplementary lines, the remainder being reported as taking "regular college work." The significance of this predominance of students in liberal arts for the problem in hand will be pointed out subsequently. The four other lines having more than a total of a hundred students are, in order, normal school, engineering, business or pre-business, and agriculture. The percentage distribution of the three main lines shown in a table omitted from this article indicates that liberal-arts work enrols 62.1 per cent, more than three-fifths of all

students; engineering and normal work enrol 9.8 per cent and 11.5 per cent respectively; approximately one-sixth of the total, 16.5 per cent, are found in all remaining lines of work. Of all enrolled, 56.9 per cent are first-year and 43.1 per cent are second-year students. The division by sex for the whole group is nearly equal, although the proportion of men slightly exceeds that of women, the percentages being 52.7 for men and 47.3 for women. Very few women are reported for engineering and not a large proportion of men for normal work.

B. THE ENROLMENT OF HIGH-SCHOOL GRADUATES IN ALL LINES OF WORK IN THE FIRST TWO YEARS OF HIGHER INSTITUTIONS

1. *As related to the enrolment of the high schools.*—The relationship to the total enrolment of the high schools of the enrolment of their graduates in the first two years of work in higher institutions irrespective of lines of work being pursued has been studied in two ways, represented in Tables II and III. In the former the high schools are grouped by size of enrolment, as 51–150, 151–250, etc. (horizontal classification), and by the number of their graduates enrolled in all lines of work in higher institutions (left-hand column). The figures in the second and remaining columns show the number of schools falling under each of the double classifications indicated. The striking feature of this table is the rather consistent drift of the distribution to larger numbers of students in higher institutions as we proceed from the smaller to the larger high schools. There is a spread of distribution, accentuated to some extent by the high schools in communities in which colleges or universities are located, but the trend is unmistakable. This interpretation is definitely borne out by the average numbers of such students shown in the lowest row of figures, which enlarge consistently from the groups of smaller high schools to the groups of larger ones.

The relationship found is given more definite measurement in Table III, for which the numbers enrolled in higher institutions have been reduced to percentages of the total enrolment of the high schools. In this table the high schools in communities in which there are no colleges or universities have been separated from those in which there are such institutions, so as to make

possible a comparison of the two groups. The columns in this table setting forth the distribution for high schools in communities without higher institutions still give evidence of some tendency to divergence in proportions, but the averages at the foot of the

TABLE II

RELATIONSHIP BETWEEN TOTAL ENROLMENT OF HIGH SCHOOLS AND THE NUMBERS OF THEIR GRADUATES ENROLLED IN THE FIRST TWO YEARS OF WORK IN HIGHER INSTITUTIONS

NUMBER OF GRADUATES ENROLLED	NUMBERS OF HIGH SCHOOLS CLASSIFIED BY SIZE OF ENROLMENT IN 1919–20						TOTAL
	51–150*	151–250	251–350	351–450	451–550	551 and Over†	
1– 10	4	2	.....	.....	.....	.....	6
11– 20	5	6	2	1	.....	.....	14
21– 30	2	3	4	1	2	.....	12
31– 40	.....	2	4	3	.....	.....	9
41– 50	.....	3	3	3	1	1	11
51– 60	.....	2	2	1	.....	1	6
61– 70	.....	.....	.....	1	5	1	7
71– 80	.....	.....	.....	.....	1	3	4
81– 90	.....	.....	1	2	.....	4	7
91–100	.....	.....	.....	1	1	.....	2
101–110	.....	.....	.....	.....	.....	1	1
111–120	.....	.....	.....	.....	.....	.....	.....
121–130	.....	.....	.....	.....	1	1	2
131–140	.....	.....	.....	.....	.....	.....	.....
141–150	.....	.....	.....	.....	.....	.....	.....
151–160	.....	.....	.....	.....	.....	1	1
Number of high schools	11	18	16	13	11	13	82
Average number enrolled‡	13.8	27.7	37.6	51.2	65.2	86.8	45.9

* In two instances the high-school enrolment was less than 50.

† Four of the 13 high schools in this group reported enrolments of 551 to 650; 3, of 651 to 750; 3, of 751 to 850; and 1 each of 863, 914, and 1,023.

‡ The averages in this and succeeding tables were computed from the original and not from the tabular arrays.

columns and the distribution in the last column but one to the right both demonstrate the consistency pointed out in interpreting the preceding table. These averages range between 11.0 and 13.4 per cent. The distribution in the last column but one shows 42—almost two-thirds—of the 67 cases falling between the limits of 7.0–14.9 per cent.

The last column in this table shows the distribution of percentages for high schools in communities in which there are colleges

or universities. Fifteen such communities are represented in the data assembled, 14 of them containing colleges and the remaining community containing a state university. Two of these communities also contain state normal schools, in one of which junior-college work is being offered. The influence of the presence of higher institutions on the percentages enrolled in them is apparent. In no instance does the percentage drop below the

TABLE III

PERCENTAGES WHICH THE NUMBERS OF GRADUATES OF HIGH SCHOOLS ENROLLED IN THE FIRST TWO YEARS OF HIGHER INSTITUTIONS ARE OF THE ENROLMENTS OF THESE HIGH SCHOOLS DURING 1919–20

PERCENTAGE ENROLLED IN FIRST TWO YEARS	NUMBERS OF HIGH SCHOOLS IN COMMUNITIES WITHOUT COLLEGES CLASSIFIED BY SIZE OF ENROLMENT							NUMBERS OF HIGH SCHOOLS IN COMMUNITIES WITH COLLEGES
	51–150	151–250	251–350	351–450	451–550	551 and Over	Total	
3.0– 6.9	2	3	1	2	2	.....	10	.....
7.0–10.9	2	7	4	4	1	3	21	3
11.0–14.9	1	2	6	3	5	4	21	3
15.0–18.9	1	1	2	1	1	1	7	1
19.0–22.9	1	2	.....	1	1	.....	5	2
23.0–26.9	.....	1	.....	.....	1	.....	2	5
27.0–30.9	1	.....	.....	.....	.....	.....	1	1
Number of high schools	8	16	13	11	11	8	67	15
Average of percentages	13.4	11.7	11.5	11.0	12.8	11.6	11.9	18.1

modal percentages for communities without local higher institutions, and nine of the cases are found to be higher than the mode. The average of the percentages for this group is 18.1, whereas the average for the group without local higher institutions is 11.9. This means that, on the average, the presence of a local higher institution adds approximately a half (52 per cent) to the proportion of high-school graduates who attend a higher institution—a fact of large significance where the question of the feasibility of the establishment of junior-college work is being considered.

2. *As related to the numbers of graduates of high schools.*—Table IV presents a relationship somewhat similar to that just demonstrated, the difference being that, instead of showing the percentages

which those graduates enrolled in the first two years of higher institutions are of the high-school enrolments, it shows the percentages they are of the numbers of graduates in the last two classes of 1919 and 1920. This proportion will come very near being the proportion of these two graduating classes enrolled in the first two years of higher institutions, the difference here being that the heads of the schools, as has already been stated, were asked to report on all of their "graduates who are this year enrolled in the first two years in higher institutions, irrespective of the year of graduation from high school." Because of some inclination on the part of graduates

TABLE IV

PERCENTAGES WHICH THE GRADUATES OF HIGH SCHOOLS ENROLLED IN THE FIRST TWO YEARS OF HIGHER INSTITUTIONS ARE OF THE TOTAL NUMBERS IN THE CLASSES GRADUATING IN 1919 AND 1920

PERCENTAGE ENROLLED	NUMBERS OF HIGH SCHOOLS IN COMMUNITIES WITHOUT COLLEGES CLASSIFIED BY TOTAL NUMBER IN THE GRADUATING CLASSES OF 1919 AND 1920					NUMBERS OF HIGH SCHOOLS IN COMMUNITIES WITH COLLEGES
	1–50	51–100	101–150	151 and Over	Total	
10.0–19.9.....	3	.....	1	1	5	.....
20.0–29.9.....	5	4	4	.....	13	.....
30.0–39.9.....	1	6	4	2	13	1
40.0–49.9.....	3	3	11	.....	17	3
50.0–59.9.....	.....	3	2	4	9	2
60.0–69.9.....	1	1	.....	.....	2	2
70.0–79.9.....	1	2	2	1	6	4
80.0–89.9.....	1	1	.....	.....	2	3
Number of high schools.	15	20	24	8	67	15
Average of percentages....	37.4	45.8	38.0	47.1	44.6	62.6

of high schools to postpone attendance on higher institutions, it was felt that the number and proportion thus ascertained would be more pertinent to the problem of where to establish junior colleges than would the numbers and percentages that would be obtained on the basis mentioned above but not used.

The percentages for high schools in communities in which there are no local colleges range from 13.9 to 88.0. The averages for each of the groups of high schools, however, do not manifest a tendency to vary widely, ranging only from 37.4 to 47.1 per cent.

The last column but one shows the average of the percentages for these 67 high schools to be 44.6, and the mode to be 40.0–49.9 with rather large numbers of schools above and below this group. Forty-three cases—about two-thirds of all—lie between 20.0 and 49.9 per cent. The presence of local colleges (last column) again shows a marked influence, both on the distribution and on the average of the percentages, which is 62.6, or 18 per cent more for high schools in communities having such higher institutions within their borders. This is an increase of 40 per cent of the proportion enrolled from communities without local higher institutions.

3. *As related to the populations of the communities.*—A third relationship of significance is that of the numbers and proportions of the total populations of the cities represented by those of the high-school graduates who are enrolled in the work of the first two years in higher institutions. The figures on population are those of the 1920 census.

The striking feature of a table compiled but omitted here is analogous to that found in Table II. The drift of the distribution of students enrolled in higher institutions is rather consistently toward larger figures as we proceed from the smaller communities to the larger ones. Seven cities of fewer than 2,000 inhabitants have an average of 15 of their high-school graduates enrolled in the first two years of higher institutions; 14 cities of 2,000 to 4,000 have an average of 20 so enrolled; 12 cities of 4,000 to 6,000 have 39; 10 cities of 6,000 to 8,000 have 46; 12 cities of 8,000 to 10,000 have 51; 11 cities of 10,000 to 14,000 have 69; 14 cities of more than 15,000 inhabitants have an average of 73 graduates in the first two years of higher institutions. Eighty cities, then, show an average of 46 students in these years of advanced institutions. The range of distribution is wide, although somewhat increased because these figures do not distinguish between communities in which there are local colleges and others in which there are none.

A better measure of the relationship under consideration is provided in Table V, which presents the distribution when the proportion is expressed as the number in each 1,000 of the population of the community represented by those graduates of the

high school enrolled in the first two years of higher institutions. There is a very clear mode in the distribution for all communities without local colleges as given in the last column but one. The averages for these columns also show a marked tendency to approximate each other except for the groups of largest and smallest communities represented. For the four groups with population figures lying between 2,000 and 10,000 these averages range only

TABLE V

PROPORTIONS WHICH THE GRADUATES OF HIGH SCHOOLS ENROLLED IN THE FIRST TWO YEARS OF HIGHER INSTITUTIONS ARE OF THE POPULATIONS OF THE CITIES

NUMBER IN EACH 1,000 OF THE POPULATION ENROLLED	NUMBERS OF CITIES WITHOUT COLLEGES CLASSIFIED BY SIZE OF POPULATION IN 1920								CITIES WITH LOCAL COLLEGES
	0–1,999	2,000–3,999	4,000–5,999	6,000–7,999	8,000–9,999	10,000–14,999	15,000 and Over	Total	
0.1– 3.0	.....	2	1	2	1	2	8	16	.....
3.1– 6.0	2	3	3	1	6	6	2	23	4
6.1– 9.0	1	7	2	5	1	1	.....	17	2
9.1–12.0	.....	.....	3	1	1	1	.....	6	2
12.1–15.0	1	.....	.....	1	.....	.....	.....	2	2
15.1–18.0	.....	.....	.....	.....	.....	.....	.....	.....	2
18.1–21.0	1	.....	.....	.....	.....	.....	.....	1	1
21.1–24.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
24.1–27–0	.....	.....	.....	.....	.....	.....	.....	.....	1
27.1–30.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
30.1–33.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
33.1–36.0	.....	.....	.....	.....	.....	.....	.....	.....	1
Number of communities	5	12	9	10	9	10	10	65	15
Average of the numbers in each 1,000 of the population	10.1	5.8	6.5	6.6	5.2	4.6	2.4	5.5	12.5

from 5.2 to 6.6 per thousand of the population. For the smaller communities the average is somewhat higher. On the other hand, the proportion declines appreciably in communities of 10,000 and over. This situation is in harmony with that found when proportions of the population enrolled in high schools have been computed, and seems, therefore, to be the result of the operation of similar social forces.

Again, the distribution of the figures for communities in which there are higher institutions (last column) is toward the larger

proportions; the average of the proportions is 12.5 in each 1,000 of the population. This is a difference of 7.0 per thousand in favor of the latter, or an increase of 127 per cent due to the presence of the local higher institution. In other words, the average proportion of the population enrolled in the first two years of higher institutions is much more than doubled by the presence of a local higher institution.

C. THE ENROLMENT OF HIGH-SCHOOL GRADUATES IN THE FIRST TWO YEARS OF COLLEGE WORK

The numbers of graduates of high schools who are enrolled in higher institutions irrespective of the line of work being followed and the proportions these are of the high-school enrolment, of the graduating classes, and of the population, certainly have meaning for the problem of where to establish junior-college work. But it must be clear that a study of some of these same relationships for those in work more nearly of the "regular college" type will be even more pertinent. This is made more apparent if we bear in mind the fact that the work offered in almost all junior colleges, public and private, today adheres closely to the liberal-arts or regular college type. Liberal-arts courses, as has been shown, are also the dominant interest of those attending higher institutions.

The reader is reminded that in interpreting the remaining tables "college work" refers to that pursued by the liberal-arts group in Table I, although doubtless a small proportion of cases under certain other classifications might be understood as pursuing this type of work.

1. *As related to the enrolment of the high schools.*—The relationship between the more strictly collegiate enrolment and the enrolment in the high school has been canvassed in a manner identical with that used for the total enrolment in higher institutions irrespective of line of work pursued. A table omitted from this article shows in numbers of students the relationship between the total enrolment of high schools and the numbers of graduates in the first two years of college work. The number of graduates in these years of college tends to increase as one proceeds from the smaller high schools to the larger. Eleven small schools of 51–150 pupils have an average of 8 graduates in the first two college years;

18 schools of 151–250 have 14; 16 schools of 251–350 have 23; 13 schools of 351–450 have 34; 11 schools of 451–550 have 44; and 13 schools of more than 550 students have an average of 55 graduates enrolled in the Freshman and Sophomore years of liberal-arts work. The spread of the distributions is appreciably exaggerated by the fact that these figures do not distinguish between high schools in communities with local higher institutions and those without.

Table VI shows that, although there is considerable variation in the proportions who attempt college work, there is some approximation to agreement in them, especially for the high schools in

TABLE VI

PERCENTAGES WHICH THE GRADUATES OF HIGH SCHOOLS ENROLLED IN THE FIRST TWO YEARS OF COLLEGE WORK ARE OF THE ENROLMENT IN THESE HIGH SCHOOLS DURING 1919–20

PERCENTAGE ENROLLED	NUMBERS OF HIGH SCHOOLS WITHOUT COLLEGES IN THE COMMUNITIES CLASSIFIED BY SIZE OF ENROLMENT							NUMBERS OF HIGH SCHOOLS WITH LOCAL COLLEGES
	51–150	151–250	251–350	351–450	451–550	551 and Over	Total	
0.0– 2.4	1	4	.....	.....	.....	.....	5	.....
2.5– 4.9	3	7	4	4	2	.....	20	1
5.0– 7.4	1	3	4	4	3	5	20	3
7.5– 9.9	.....	1	5	.....	4	3	13	2
10.0–12.4	2	.....	.....	2	1	.....	5	1
12.5–14.9	1	1	.....	1	.....	.....	3	1
15.0–17.4	.....	.....	.....	.....	.....	.....	.....	2
17.5–19.9	.....	.....	.....	.....	.....	.....	.....	2
20.0–22.4	.....	.....	.....	.....	1	.....	1	1
22.5–24.9	.....	.....	.....	.....	.....	.....	.....	1
25.0–27.4	.....	.....	.....	.....	.....	.....	.....	.....
27.5–29.9	.....	.....	.....	.....	.....	.....	.....	1
Number of high schools	8	16	13	11	11	8	67	15
Average of percentages enrolled	6.5	4.8	6.4	6.7	8.6	7.0	6.5	13.9

communities without colleges. Thus, of the entire group of high schools in such communities (see last column but one), 40, or almost two-thirds of the group, range between 2.5 and 7.4 per cent. It is also to be noted that the averages of the percentages as given

in the lowest row do not vary beyond the limits set by 4.8 and 8.6 per cent.

The percentages for high schools in communities with higher institutions vary more widely, but tend to be much higher. In fact, the average of this group of percentages is 13.9, or more than twice that of the average as shown in the preceding column. The presence of a local college on the average more than doubles the proportion of the graduates who pursue college work.

2. *As related to the populations of the communities.*—A table omitted from this article and Table VII present the situation by

TABLE VII

PROPORTIONS WHICH THE GRADUATES OF HIGH SCHOOLS ENROLLED IN THE FIRST TWO YEARS OF COLLEGE WORK ARE OF THE POPULATIONS OF CITIES

NUMBER IN 1,000 OF THE POPULATION ENROLLED	NUMBERS OF CITIES WITHOUT COLLEGES CLASSIFIED BY SIZE OF POPULATION IN 1920								CITIES WITH LOCAL COLLEGES
	0–1,999	2,000–3,999	4,000–5,999	6,000–7,999	8,000–9,999	10,000–14,999	15,000 and Over	Total	
0.0– 0.9	1	2	1	1	.....	.....	1	6	.....
1.0– 1.9	.....	2	1	2	2	4	6	17	1
2.0– 2.9	2	2	3	3	3	2	3	18	2
3.0– 3.9	.....	3	1	1	2	3	.....	10	1
4.0– 4.9	.....	2	1	.....	2	.....	.....	5	.....
5.0– 5.9	.....	.....	1	.....	.....	.....	.....	1	1
6.0– 6.9	.....	.....	.....	2	.....	.....	.....	2	.....
7.0– 7.9	1	1	1	.....	.....	.....	.....	3	2
8.0– 8.9	.....	.....	.....	1	.....	1	.....	2	3
9.0– 9.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
10.0–10.9	1	.....	.....	.....	.....	.....	.....	1	.....
11.0–11.9	.....	.....	.....	.....	.....	.....	.....	.....	1
12.0–12.9	.....	.....	.....	.....	.....	.....	.....	.....	1
13.0–13.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
14.0–14.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
15.0–15.9	.....	.....	.....	.....	.....	.....	.....	.....	1
16.0–16.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
17.0–17.9	.....	.....	.....	.....	.....	.....	.....	.....	1
32.1	.....	.....	.....	.....	.....	.....	.....	.....	1
Number of cities	5	12	9	10	9	10	10	65	15
Average of numbers in each 1,000	4.8	2.9	3.2	3.5	2.8	3.0	1.7	3.0	9.6

population of the cities in which the high schools are located. There is a decided tendency toward a larger enrolment in college

as cities increase in population. Seven cities of less than 2,000 have an average of 9 graduates in college work; 14 cities of 2,000 to 4,000 have 12; 12 cities of 4,000 to 6,000 have 24; 10 cities of 6,000 to 8,000 have 24; 12 cities of 8,000 to 10,000 have 31; 11 cities of 10,000 to 15,000 have 46; and 14 cities of over 15,000 people have an average of 46 high-school graduates in the first two years of college. It will be borne in mind that these data differ from the data of Table V in that the former refer only to college work in liberal arts. While there is a wide variation in the number of graduates enrolled for each population group—emphasized somewhat, it must be admitted, by the communities in which there are local colleges—the averages show a tendency toward increase according to the size of population. The averages of the numbers in each 1,000 (Table VII) of the population bear out this interpretation, since these proportions for all but the lowest and highest population groups range only between 2.8 and 3.5. In the smallest communities this proportion is exceeded considerably and in the largest it drops to 1.7. The last column but one shows that the proportions for 46, or more than two-thirds of the cases, range between 1.0 and 3.9 per thousand.

The proportions for communities containing colleges vary even more widely than those without but tend to be higher. The four lowest proportions in this last column are those from the four largest communities represented in this group. The average for this group of 15 communities is 9.6 in each 1,000, or, on the average, 3.2 times as large a proportion as is characteristic of communities without local colleges.

APPLYING THE DATA PRESENTED TO THE PROBLEM IN HAND

The standpoint assumed.—Application of the findings so far presented will proceed with the assumption that the establishment of public junior colleges as parts of city school systems is under consideration. The facts presented have pertinence for the problem of establishing junior colleges under private as well as public auspices, but it simplifies the task of discussion to focus attention upon a single type of institution.

It will be taken for granted also that it is contemplated at first to offer only regular college work in liberal arts. The assumption

is justified by the rather close adherence to this kind of work in the offerings of junior colleges already established. This is taken for granted despite the expectation that, if the junior-college experiment has enough fundamental need to give it a permanent place in our school system, enrichment and enlargement of the curriculum will be just as inevitable as was the extension of the high-school curriculum when forced by its popularization and democratization. The assumption is justified also by the large extent of domination of junior colleges by higher institutions which will be characteristic of the earlier period of development, just as was the case with our high schools until they came to be conceived as having purposes other than preparation for college work.

The minimum junior-college student body.—No definite number of students is generally accepted as a minimum to justify the institution and maintenance of junior-college work. To arrive at such a minimum will require much study of unit costs and of the size of classes, as well as a long period of experimentation with the new unit. However, we may accept as a tentative minimum the number chosen by the North Central Association, namely 50 students in both years, as the minimum for the association's standards for the junior college.

It is conceivable that provision might be made for two years of junior-college work with a single student in each year. However, this would not be found feasible under public auspices because of the extremely high cost per student. The feasibility increases with the number of students. In this sense, another test would be the minimum numbers to whom the work is now being given in public junior colleges which have been in operation through a period of years. The writer has at hand figures on enrolment during the current academic year in seven public junior colleges which have been in operation for some years. They are as follows: 32, 38, 54, 89, 101, 132, and 229. From this it appears that two communities after several years of experience find it practicable to provide the work for from 30 to 40 students. Data assembled by McDowell[1] show that for 12 public junior colleges with students enrolled in both years of work the median enrolment in 1916–17 was 57, and the enrolments in the six institutions below the median,

[1] *Bureau of Education Bulletin No. 35, 1919*, pp. 132–34.

9, 12, 13, 22, 34, and 49. Of these, so far as can be ascertained, the first three and the fifth are no longer in existence. The fourth is being continued, this year with an enrolment of 32, as is also the last in the series. On the other hand, all the junior colleges at that time above the median are still in existence, with the exception of two which have been displaced in the city of their location by a branch of the state university. This evidence leads to the conclusion that a student body in both years of fewer than from 30 to 35 does not presage longevity for a junior college. A rough estimate of unit costs for adequate work will discover a strong factor of discouragement in such cases. A minimum enrolment of from 35 to 40 will therefore be used as a second test of feasibility.

The size (*a*) *of high-school enrolment and* (*b*) *of population assuring feasibility.*—(*a*) If it is assumed that the North Central Association standard should be applied, disregarding the possible increase in numbers enrolled that might result from starting a junior college in a community, there would be only a small proportion of the high schools considered in this study that would defend its establishment. The point of feasibility is not often reached even where there are at least about 500 high-school students, as only 3 of the high schools in the 351–450 group have as many as 50 graduates in the first two years of college work and only 2 in the 451–550 group. A situation very similar to this appears in that portion of Table VI presenting the distributions for communities without colleges. It is when the percentages for high schools in communities with colleges are used conservatively—and these have been pointed out as being more pertinent to our problem—that we find the necessary number of students appearing with a high-school enrolment of approximately 400. If the feasible minimum is set at 35 or 40 students, it may be seen that a high school with an enrolment of about 300 will be likely to supply the necessary student body.

b) Analogous application of these minima to Table VII leads to somewhat similar conclusions as to the proportion of communities in which the establishment of junior-college work is likely to be found practicable. That relatively few schools could attain the North Central Association standard of 50 students is borne

out perhaps more emphatically by the distributions and average members in each 1,000 of the population in that portion of Table VII presenting the situation for communities without local colleges. However, the influence of the presence of a college in the community, demonstrated in the last column to the right, both in the distribution and in the average number in each 1,000, leads to the conclusion that the establishment of junior-college work would be feasible in many of the communities which this interpretation would place in the improbable group. Assurance is added to this conclusion from the fact that the four lowest proportions in this column are from the four largest cities represented in it, with populations ranging between 19,000 and 29,000. Here, as in the cities represented in the left-hand columns, the proportion tends to be greater in the smaller than in the larger cities.

The typical influence here shown leads to the expectation that the North Central Association standard as to numbers ought to be met in cities of 9,000 to 10,000 or more, and that the lower tentative standard here used (from 35 to 40 students) ought to be met in cities with populations of 6,000 to 7,000.

A study of the central tendencies in Table VIII, which gives the percentages of the populations of cities represented by those enrolled in high schools, will show that cities with a population of 9,000 to 10,000 are likely to have high-school enrolments approximating 400; and those with a population of 6,000 to 7,000 high-school enrolments approximating 300. This indicates a likelihood that the communities meeting the requirements of population as set will be identical with those having high schools with the requisite enrolment.

It may be gratuitous to emphasize the fact that the rough prediction here made is based for the most part on central tendencies and that in many particular situations deviation from it is to be anticipated. The variation evident in the figures in the tables must lead to the admission, for instance, that there will be some communities with populations of 10,000 or high schools with enrolments of 400 or more from which it will not be possible to recruit the minimum standard of 50 students for junior-college work. On the other hand, this same variation makes clear that there will be

communities with much smaller populations and high schools with smaller enrolments where this minimum number may be secured. This variation should be looked upon as an admonition that those in charge of the school system should not attempt to institute junior-college work until they have carefully analyzed the local situation.

TABLE VIII

PERCENTAGES OF THE POPULATIONS OF THE CITIES ENROLLED IN HIGH SCHOOLS

PERCENTAGE OF POPULATION ENROLLED IN HIGH SCHOOL	NUMBERS OF CITIES CLASSIFIED BY SIZE OF POPULATION IN 1920							TOTAL
	0–1,999	2,000–3,999	4,000–5,999	6,000–7,999	8,000–9,999	10,000–14,999	15,000 and Over	
1.0– 1.9	.....	1	.....	.....	1	.....	2	4
2.0– 2.9	.....	.....	.....	2	1	.....	6	9
3.0– 3.9	.....	1	1	2	4	6	4	18
4.0– 4.9	1	.....	4	2	3	4	2	16
5.0– 5.9	.....	1	3	3	3	.....	.....	10
6.0– 6.9	1	6	4	1	.....	1	.....	13
7.0– 7.9	1	2	.....	.....	.....	.....	.....	3
8.0– 8.9	1	2	.....	.....	.....	.....	.....	3
9.0– 9.9	.....	1	.....	.....	.....	.....	.....	1
10.0–10.9	2	.....	.....	.....	.....	.....	.....	2
11.0	1	.....	.....	.....	.....	.....	.....	1
Number of cities	7	14	12	10	12	11	14	80
Average of the percentages	8.5	6.1	5.3	4.2	4.0	4.0	2.8	4.8

The possible total number of junior colleges.—A query naturally arising after we have arrived at minima of high-school enrolment and of population of city likely to make the establishment of junior-college work feasible is this: What is the possible total number of junior colleges? A rough estimate may be made for the states represented by the data used in this study. In these states, according to the 1920 census, there are almost 300 cities with populations of 9,000 and over. As almost 100 of these cities already contain colleges or universities, there are approximately 200 cities in these states which could meet the standard of the North Central Association. A similar computation for cities of 6,000 and over shows a total of approximately 300 that would be able to meet the lower standard.

The estimates just made are given corroboration by estimates of the total number of communities in the same group of states having high schools with requisite enrolments, when such estimates are based on the data on enrolment rather than on population. Such data are at hand in *Bureau of Education Bulletin No. 19, 1920*, which reports by states on pages 19–20 the numbers of high schools by size of enrolment. According to this report there are in these states 310 high schools with enrolments of more than 400 students. In order to arrive at the number of communities having high schools of this size, it will be necessary to reduce this total by about 50 for the number of high schools in excess of one for each city in the largest cities having two or more high schools. The remainder will require reduction again by the approximate number of the communities in which these high schools are located in which there are also colleges or universities, approximately 85 or 90. This will leave about 175 or 180 communities having high-school enrolments of more than 400. This number is slightly less than that estimated from the populations only, but as the data on enrolment are for 1917–18, whereas the figures on population are for 1920, the discrepancy is doubtless compensated for by the increase in high-school enrolments during the intervening period.

An estimate similarly made for the lower standard shows somewhat less than 300 communities whose high-school enrolments are in a position to meet it, but the difference between this number and the estimate on population only would again be made up by the recent increase in high-school enrolments.

Some related considerations.—We are not warranted in assurance that typical proportions of a city's population or of its high-school enrolment will enter upon the work of a local junior college if any disturbing forces are at work. If the community or high school under consideration is near a higher institution enjoying prestige in the neighborhood, the proportions drawn to the junior college at first must be less than those indicated as likely to be typical. Some time must be allowed for popularizing the idea. Nor will the proportion attain the normal if fees that approach the prohibitive are required for attendance. What is prohibitive in this respect will vary somewhat from community to community.

There can be no reasonable doubt that the proportions of the population attending higher institutions as found and reported here are bound to increase. As all those conversant with the situation in secondary and higher education are aware, college attendance has been increasing rapidly through several decades. If junior colleges come at all commonly to find a place in our school system, even more rapidly increasing numbers and proportions of students will avail themselves of the opportunities afforded. This will be due in part to mere availability, as already indicated, to the public character of the institution, and to the tendency that must come to merge the two units of the school system. This increase will be accompanied by an enrichment of curricula in these years, and this in turn will also accelerate the increase. Consequently the point of feasibility for establishing junior colleges will tend to drop to smaller and smaller communities.

There will be some tendency for those high-school graduates who, under present conditions in which no kind of work on the collegiate level is provided in their communities, normally enter lines of work other than regular college work, e.g., engineering normal, etc., to shift to the line of work offered in the local junior college when it comes to be established. It is impossible to estimate the extent of such shifting. It will hardly come near the limits set by the contrasts of numbers and proportions shown in Tables II–V on the one hand and in Tables VI–VII on the other. But there will be enough of this shifting to add something to the assurance of the predictions of feasibility which have been made.

To date, the enrolment in junior colleges maintained as parts of city school systems is almost strictly from local sources. Such facts as the writer has at hand touching the source of the student body demonstrate that this enrolment is much more nearly local than is that of the first two years of private four-year colleges. While it appears, in a study made by the writer of the residential distribution of college students, that the percentages which the students from the local community are of the entire student body increase as the populations of the communities increase, the students in private colleges are far less exclusively from the cities of location. For this several factors must account, such as the

novelty of the public junior college as contrasted with the prestige of a long-established private college, denominationalism, and the presence in its equipment of dormitory facilities which few, if any, public junior colleges provide. These factors will operate for some time to restrict the enrolment of public junior colleges from without the local community.

It seems reasonable to expect, however, that the public junior colleges will come to draw more largely than they have from outside the immediate community. While in some instances they have been established in connection with township and county high schools, they have been looked upon largely as very local institutions. It is not inconceivable that the state may come to foster these junior colleges as it is now supporting universities, establishing them to serve larger units of the population. With the popular acceptance of the junior-college idea and the provision of dormitory facilities the local character of the present attitude toward the junior college may break down, and in its place come an attitude not unlike that we now have toward private higher institutions.

Although the numbers and percentages of students drawn from outside the local community are larger for private colleges than for public junior colleges, there seems to be on the average no very marked difference between the number in each 1,000 of the population who come from within the community. The average of these proportions for 9 private colleges located in cities ranging in population from 15,000 to 72,000 is 3.3, with a range of 1.5 to 5.8, whereas the average for 7 public junior colleges in cities ranging in population from 13,000 to 138,000 is 3.0, with a range of 1.7 to 6.7.

GUIDANCE IN THE HIGH SCHOOL WITH SPECIAL REFERENCE TO COLLEGE ENTRANCE

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In limiting our discussion to the question of guidance for college entrance we must first name several educational principles usually accepted, in order that we may proceed on common ground, or, if that be not possible, at least that we may recognize and take account of our differences.

1. We must not forget the truth that all persons above the physical and mental age of five years can profit by education. The educational work in war times, the tutorial schools of England, labor colleges, and a number of other experiments have proved this beyond possibility of denial. It means of course that a system of universal education for all ages would be possible, that all normal persons could profitably take some work in juvenile or adult classes, and that no person need ever be told that his education is over.

2. Since our modern life is full of complexity, doubt, difficulty, and disagreement, all persons should study. We shall find persons whose education cannot go very deep; nevertheless it can at least become broader and broader, on a lower level, no doubt, than the education of those with great intellectual gifts.

3. We must recognize that in a world in which every person had habits of study without doubt a far greater number of persons than now would be studying the classics, history, philosophy, languages, and literature. Even if a greater number of individuals were studying subjects related to their work, this study itself would lead toward the humanities. Adult education wherever tried has tended to prove this truth. It is about time we removed the *versus* from the ridiculous expression "liberal *versus* vocational education."

4. A worthy kind of vocational guidance must favor delay in the final choice of one's calling for as long a period of educational experience as seems possible in view of individual requirements and opportunity. By the same logic the narrowing of one's education to strictly vocational courses must itself be delayed as long as can be called safe. Thus, the high-school boy who claims to have decided that he is to be an architect should be encouraged to hold this decision as a tentative one, and should be persuaded in any case to continue his broad education as long as he can.

5. In view of these considerations it appears that our present high schools are not completely meeting the need for universal education, and that we must recognize the necessity of caring for the equal or greater number of children of the same age now at work by means of co-operative or part-time systems, continuation schools, extension courses, or other organizations, whether parallel to the present high schools or incorporated within their administration. It should be said in passing that neither evening schools nor correspondence courses are adapted to juvenile requirements, since they can function only in the field of adult education. By the same reasoning as that which we have just used in appraising our high schools, the present offering of American colleges touches but one little corner of the possibilities involved in adult education. The American college is adapted to the 5 or 10 per cent of our population whose intelligence level is highest. Parallel with it, if not in many cases incorporated with it, at least through extension courses, must go a very much wider opportunity for education continued throughout life. The university extension courses conducted by state universities for inmates of state penitentiaries give us a hint as to future possibilities. In considering the question of guidance for admission to college, we must not forget the smallness of the size of the problem with which we are dealing.

6. By the word guidance we mean enlightenment and advice leading to self-direction. Guidance relates to intellectual life, culture, future vocation, citizenship, moral problems, recreation, social behavior, co-operative activity, and the like.

7. Educational guidance comprises all of the foregoing forms of guidance; it leads, whenever it is effective, into advice regarding

various phases of the individual's personal and social life. For example, most decisions regarding college entrance, choice of curriculum, and choice of studies, run into the question of vocational guidance. Vocational possibilities are accepted or rejected through the particular educational decisions made.

Should the high school be a selective agency?—Undoubtedly our colleges are and, under their present organization, must necessarily be selective agencies. The high school, too, as at present organized, obviously must reject those children so retarded mentally that they have not been able to make progress in the ordinary studies of the elementary school.

Even if our typical high school, however, be equipped to give broad or deep education to 99 per cent of our children of appropriate age, there are at present three opinions on the question whether or not the school should try to accomplish this end. First, there are those among us who wish to see Greek and blacksmithing, Latin and vocational agriculture under the same roof and the same school organization, with children of all kinds mingling, at least in some of the studies and activities of the school. Second, there are those who wish to separate children rather early for vocational training—to take those who have decided to be dressmakers into a trade school under a different organization from a school for those who continue general education. Third, another group wishes to skim off the intellectual cream—to segregate the brighter children in the classical or "liberal" high schools and thereby protect them against intellectual contamination.

It will be clear that we shall have to examine some of these questions before we can decide on educational guidance in the high school, and that our problems will never be solved simply by putting a well-equipped educational counselor into the unchanged school machinery.

If 98 or 99 per cent of all our population between the ages of fourteen and eighteen were in our high schools full time, or connected with them for part-time work, what condition of affairs would we have so far as vocational guidance is concerned? Three groups might easily be distinguished: first, those who have not yet decided upon any vocational choice; second, those who have

decided but wish to continue broad education as a foundation for later vocational work; and third, those who have decided and insist upon vocational training now. This classification is not so easy as it appears, because an investigation of high-school students will show how variable and changeable these decisions are. Boys' and girls' decisions change overnight. Their choices are founded in many cases upon the merest whim. They rush into vocational courses on the basis of a second or third preference rather than a first, and they are led into decisions by means of the worst forms of false guidance. No one who has studied the problem of children's choices, unless he is an adherent of intellectual aristocracy and therefore does not believe in universal education, can justify a neglect of educational and vocational guidance. Neither, I think, can one justify the separation of children into different high schools unless he ignores the obvious necessity for better guidance. Many of the champions both of the classics and of vocational education have failed to take account of the human factor involved in the choice of courses and the changes of mind which govern American school pupils. Transfers from course to course must be provided for and can best be offered within one school.

Another possible classification is based upon intelligence quotients. Psychological tests are finding increasing use in helping to determine levels of intellectual ability and have already proved their value in the educational guidance of students, both in high school and college. They do not, however—and apparently it has never been claimed that they do—justify the separation of children into classic and vocational schools. In each occupation itself there are varying requirements in intellectual ability. The well-known diagram worked out from psychological tests in the army shows how great this variation is. The overlapping of intelligence levels is so extensive that there are undoubtedly many mechanical engineers who rank in intellectual ability with the average intelligence of bricklayers, cooks, and laundrymen, while, on the other hand, some teamsters and barbers excel in ability the average of bookkeepers, nurses, and dentists. A study of any occupation will reveal its possibilities for leadership, its social and economic problems, its complex problems of unionism or other

organization, while, on the other hand, there is room, in satisfying the world's needs, for some architects, teachers, draftsmen, musicians, and photographers of very moderate intellectual attainments. Vocational guidance cannot justify a separation of children into different types of schools in the high-school age on the basis of intelligence levels. A social theory of aristocracy, false notions of leadership, or a laissez faire philosophy may justify such separation, but not educational or vocational guidance.

On the other hand, we can find positive and affirmative work for the high school to do in the matter of selection, provided the selection and classification are always understood as tentative and do not mean radical separation of children. For example, the three classes of students above described must be taken note of: those who feel that they must have vocational education; those who have decided upon their calling but wish to continue general education; and those whose general education should be continued because they have not yet reached any decision.

The necessity for vocational education in the high school is of course a sociological and economic necessity as well as an educational one, and it extends downward for a small number of children into the junior high school as well. Progress in social imagination may correct this condition. At present, however, some children in the junior high school rebel at the formalism or otherworldliness of an all-sitting-still program and demand an activity which to them resembles vocational life outside. Others demand a variety of activities related to manual, agricultural, and home-making arts which the usual school offering in certain junior high schools does not yet provide. Further, many of our state laws allow the children to take up the burden of life at the age of fourteen; in many cases this means that the child's decision alone determines whether or not he shall continue in school. It becomes a choice, therefore, between vocational education or no education, and at present training for juvenile occupations or a juvenile kind of training for adult occupations is the only offering which will hold certain children in school.

An ideal plan would be to continue broad education for every child as long as possible, but to watch over the exigencies of his

life so that when he becomes restless or shows signs of failure or threatens to leave school he may be given a combination of general education and vocational try-outs, may later proceed to try-outs combined with vocational training, then to a part-time system, and finally to full-time work, with perhaps a continuation-school contact with the high school.

Selection and classification of children in the high school can always be made in such a way as to provide for social contacts among all the children of like age. There is a middle ground between coeducation in all studies and complete separation in schools; this middle ground is the mingling of all groups in student activities, recreation, music, English, history, and manual arts, and their separation for purposes of special training. We can have a comprehensive high school full of effective specialized work, and at the same time we can provide for social and academic contacts at many points. In life, persons of high attainments are not segregated. They are constantly at work for and with others of lesser gifts, and it is no doubt forced artificiality which separates these groups in the school. A recent editorial very well remarked that the greatest problem in American education is the training of brighter children in such a way as to make them effective for service proportionate to their gifts, and at the same time to educate them so that they will not exploit the general population for their own account. The surest way to prepare for misunderstanding and exploitation is to keep the social groups far apart.

Appropriate adjustments in the school program.—We may here consider curriculum changes needed for proper educational guidance. Try-out courses have been spoken of above; the meaning in this connection is that the school shall be an instrument for discovering and testing the ability of the pupils in a number of activities related to life. Undoubtedly algebra will discover and develop mathematical ability, English composition the ability to write, and oral English the ability to speak. Work on the school paper will test interest in journalism; executive ability may be discovered through student activities; love of nature through scout craft and botany; interest in science through courses in that subject. The beginnings of interest in law, banking, agriculture,

dressmaking, etc., may be discovered by means of the widening of the school program and the development of student activities. One who has had but one year of high-school experience should know at the end of that year whether or not he has some measure of initiative, persistence, co-operative behavior, and unselfish action. If the high school does not aim to uncover such qualities and to develop them, I cannot imagine by what other aims it may attempt to justify itself.

Again, classes in occupations should be offered, perhaps in the Freshman and Junior years of the high school. In the Freshman year the course should be devoted largely to a study of the work of the high school, with the particular school's catalogue, yearbook, or curriculum announcement as one of its texts. A general survey of the occupational world both as to its general problems and the requirements of specific callings should serve to emphasize the need for continued education. The relation of both education and occupations to good citizenship should be particularly stressed. The work of this class should be civic and social rather than individual in its approach and result. Individual needs will be best met, in my opinion, by a broad rather than a narrow aim for the course, and this is further justified because of the fact that even one's own vocational decisions must be made in the light of social relationships.

The class in occupations for the junior year might include a study of various colleges, considering their aims, admission requirements, and the qualities of citizenship and the professions for which they offer either a foundation or an actual training. Self-discovery and self-guidance must always be the most important result of try-out courses and classes for the study of occupations, and will thus lead to more satisfactory answers in the Junior year to the question, Who should go on to college?

The work of the counselor.—On the basis of a school curriculum which discovers and tests all possible qualities of character, interest, and abilities, the educational counselor may begin his work. He may use tests of general intelligence, but should remember that these tests must be considered in the light of other information. Even for the detection of border-line cases Dr. Fernald names the

intelligence test as only one of his list of ten factors: physical examination, family history, personal and developmental history, history of school progress, examination in school work, practical knowledge, economic efficiency, social history and reactions, moral reactions, and psychological tests. Doubtless our tests will show probabilities rather than absolute prophecy. Indeed, there are indications that the much-misunderstood and difficult-to-define correlation coefficients might well be superseded by probability tables; for example, a recent study indicates that those whose intelligence quotient falls below 90 have only one chance in twenty-five of graduating from an ordinary college preparatory course in high school. Later investigations may reveal how many chances out of a hundred any person has of being graduated from college if his record in the alpha psychological test as given in the army be determined at any point along the scale of possible scores. The implied statement in the Pennsylvania regulations that a system of educational guidance can lead "definitely to the giving of positive advice by the school to certain students that they have the ability to do Freshman college work successfully and the giving of advice to other students that they do not have such ability" no doubt must be modified. We can determine this matter with a high degree of certainty for some students, but many others will be found to have an even chance to succeed, and they or their parents will have to decide whether or not they wish to take this chance. It is worth while to reiterate the possibility of modifying and differentiating Freshman work, perhaps in junior colleges, so that practically all our population can succeed.

It is the counselor's business to lay before the individual all possible information which might affect his decision. He will save an enormous amount of time if much of this can be given in the class in occupations, as he can then confine his personal advice to the more difficult individual problems. He should have opportunity for home visits and visits to various places where the work of leading occupations is carried on. He should organize a list of persons, preferably ex-teachers, who are experienced in the leading occupations and should secure their co-operation in giving him facts and in helping individual children. He should have adequate

clerical help and should have funds at his disposal for collecting a library of occupational literature. He should have at his command machinery for sending out helpful material and suggestions to the other teachers, particularly in giving them suggestions for making their work more vital for purposes of discovering and testing ability. He should have opportunity to visit other schools and colleges and to keep in touch with the progress of guidance elsewhere. He should co-operate with librarians, employment managers, unions, chambers of commerce, newspapers, scout-craft organizations, clubs, recreational organizations, Americanization agencies, and other avenues of social progress. He should not be overwhelmed with the task of finding jobs for children who leave school; this work should be done effectively outside of his own personal effort. He should keep simple and usable records of the successes of children under his care. He should find it possible to give boys and girls advice about miscellaneous working experiences which they have along with school experiences or during summer vacations in order that these contacts with life may be related to future hopes and opportunities. He should continue teaching, preferably with a class in occupations. He should pay particular attention to pupils who are failing, and through the study-coach plan or other special classes he should keep them under school guidance as long as possible. He should take to the principal of the school and the superintendent of schools his findings as to the necessity for better forms of vocational guidance and for part-time work and should co-operate with them to carry into effect such important reorganizations as seem desirable. He should foster student activities and student participation in school management, knowing as he will that the qualities of character and ability therein developed will oftentimes prove more important in the general success of the future worker and citizen than will some of the usual studies.

Training of the counselor.—The personnel of those concerned with educational and vocational guidance ought to be even higher than our present standards for school principals. The principal directs the work of teachers who are intelligent enough to check him up if he goes wrong. The counselor, however, dealing with

the futures of defenseless children will need a high philosophy of education and of life. The study of sociology, economics, educational psychology, and education is essential. Effective work is impossible without whole-hearted interest in children, sound judgment, industry, and tact.

Work to be done.—Is there any danger of overemphasizing the guidance for college entrance? I think not, unless one deliberately ignores the proposition of educating and guiding others. The recognition of the existence of a diversity of gifts is in full harmony with a true democracy. It has been well said that nothing is so unequal as the equal treatment of unequals, and no one wants a pseudo-democracy of dull sameness and limitation of opportunity. There is work to be done, however, in bringing about for every child the ideal adopted by the National Vocational Guidance Association at its recent convention, "to make sure that each child obtains the equality of opportunity which it is the duty of the public schools to provide."

THE NORTH CENTRAL ASSOCIATION

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The North Central Association of Colleges and Secondary Schools has doubtless done more than any one other single organization in America to standardize colleges and secondary schools, and to bring about a close articulation of the two types of education.

As originally founded, the primary purpose of the Association was to encourage the co-operation of secondary-school people and college and university professors and administrators, to the end that common problems might be discussed and clarified, institutional prejudices and misunderstandings reduced or eliminated, and cordial working relations established. In order that this ideal might be realized as fully as possible, a rule of the Association has been that all officers, commissions, and committees shall, as far as feasible, be composed of an equal number of representatives of the secondary schools and of the institutions of higher learning.

A second step early taken by the Association was the exchange, by the various universities, of the local lists of accredited secondary schools. As time went on the Association realized the desirability of preparing a list of schools of its own. In order to insure complete confidence among all institutions, the Association placed the standards for accrediting considerably higher than the standards in effect in any given state or at any given university. These standards have been amended and expanded from year to year, as circumstances seemed to make desirable, but certain foundational tenets have remained unaltered. Among the more notable of these are: (1) fifteen units required for graduation; (2) a corps of not fewer than five teachers of academic subjects; (3) a college degree for all teachers of academic subjects; (4) a teaching load of not to exceed six periods per day; and (5) recommendation by a state or university official who has made a rigid and thoroughgoing inspection of the school while in operation. More recently

there have been added such principles as the following: (1) professional training for all teachers and supervisors of academic subjects; (2) a school year of thirty-six weeks; (3) a class period of at least forty minutes; (4) a hygienic building; (5) an attractive salary schedule; and (6) placement, by the several state authorities, in the highest list of classified schools.

The first list of schools thus accredited, published in 1904, gave recognition to 160 schools. In March, 1921, the Association accredited 1,372 schools of the secondary type, distributed as follows:

Arizona	17	Montana	30
Colorado	46	Nebraska	82
Illinois	208	New Mexico	25
Indiana	82	North Dakota	54
Iowa	93	Ohio	181
Kansas	82	Oklahoma	54
Michigan	117	South Dakota	32
Minnesota	83	Wisconsin	99
Missouri	72	Wyoming	15
		Total	1,372

That the Association enjoys a high degree of respect among school people is evidenced by the figures cited. Few schools in the North Central territory are satisfied to be omitted from the accredited lists, if their attainments make them at all qualified to be included. A paragraph taken from the Foreword of the Association's published bulletin expresses the situation admirably.

> It is therefore a distinct honor for any institution to hold affiliated or accredited relationship with this body. The Association's official recognition gives prestige to a school among educated men and women everywhere. Its recorded approval is a letter of introduction to all colleges, universities, and professional schools in the land, and guarantees efficiency and high standing to these institutions. Accredited relations with the Association bring to a secondary school the same distinction and honor as an institution that membership in the society of Phi Beta Kappa or Sigma Xi confers upon an individual, or that high rating by Bradstreet or Dun brings to a firm in business. Moreover, membership in the Association aids boards of education to secure better prepared teachers, to erect barriers against untrained teachers, and in general to raise educational standards in their communities. It is the hope of the Association that all schools which are accredited by it will cherish the honor and seek to uphold the standards mutually and co-operatively established.

A third important step taken by the Association was its decision to standardize institutions of higher learning and to publish a list of accredited schools of this kind. Such an undertaking was begun in 1913. These institutions are grouped under three headings, namely, (1) colleges and universities; (2) junior colleges; (3) institutions primarily for the training of teachers. In 1920, the numbers thus accredited were: colleges and universities, 128; junior colleges, 15; institutions primarily for the training of teachers, 45; total, 188.

At the present time the Association is organized into three standing commissions, as follows: (1) Commission on Institutions of Higher Learning; (2) Commission on Secondary Schools; (3) Commission on Unit Courses and Curricula.

Each year these commissions, in addition to performing routine administrative work and standardizing and accrediting various institutions, undertake to conduct scientific and statistical studies relating to one or more important problems. Thus, for illustration, during each of the past four years the Commission on Secondary Schools has gathered and compiled data from more than 1,200 high schools and published its findings in a series of rather complete reports. These studies are: "The Accredited Secondary Schools of the North Central Association."[1] "The Effect of the War on Secondary Schools,"[2] "Training for Citizenship in the North Central Association Secondary Schools,"[3] and "The Duties of High-School Principals."[4]

Next year, 1922, the intent is to make an exhaustive study of the academic and professional training of all high-school teachers in the eighteen states of the Association.

The Commission on Secondary Schools has likewise sought to influence the administration of schools by means of resolutions that bear directly upon vital school matters. Two such resolutions were passed this year. They are:

1. *Resolved*, That the Commission recommend to the colleges of the Association that they issue to each student taking professional training in

[1] *Bureau of Education Bulletin No. 45, 1919.*

[2] *Proceedings of the Twenty-fourth Annual Meeting of the North Central Association of Colleges and Secondary Schools.*

[3] *School Review*, XXVIII (April, 1920), 263–82.

[4] *Ibid.*, XXIX (May, 1921), 337–50.

Education a certificate indicating in detail the amount and character of such work.

2. *Resolved*, That it is the opinion of the Commission that (*a*) It is unalterably opposed to the lowering of the standard for teachers in the North Central high schools. (*b*) The only way these standards can be maintained is through an adequate increase in salaries. (*c*) An increase of at least 100 per cent over the high-school salary base of 1914–15 is imperative at this time.

Inasmuch as there appears to be in all parts of the country a real interest in the standards for accrediting secondary schools in the North Central Association, those standards, as adopted in March, 1921, are herewith presented.

I. REGULATIONS

1. No school shall be considered unless the regular annual blank furnished for the purpose shall have been properly and completely filled out and placed on file with the inspector. Schools in good standing will make a complete report on teachers once in five years; but full data relative to changes must be presented annually. (A full report will be required in 1921; again in 1925, and every five years thereafter.)

2. New schools, hereafter seeking accrediting, shall submit evidence (e.g., a resolution) showing an approval of the standards of the Association and of the application for membership by the local board of education or school trustees.

3. The time for which schools are accredited shall be limited to one year, dating from the time of the adoption of the list by the Association. Schools that have been continuously accredited for five or more years may not be dropped for any violation of standards. Such schools are to be warned. But if the violation is persisted in for a second year, they shall be dropped.

4. The Association will decline to consider any school unless such school is in the highest class of schools as officially listed by the properly constituted educational authorities of the state.

5. In all emergency appointments during the school year in which teachers do not fully meet Standards 6A and 6B the Commission will insist that these be temporary and for the remainder of the current year only. Such cases must be duly certified by the superintendent or principal, including a statement concerning the training, experience, salaries, and efficiency of such teachers.

6. The agent of communication between the accredited schools and the secretary of the Commission for the purpose of distributing, collecting, and filing the annual reports of such schools, and for such other purposes as the Association may direct, is as follows: (*a*) In states having such an official, the inspector of schools appointed by the state university. (*b*) In other states the inspector of schools appointed by state authority, or, if there be no such official, such person or persons as the secretary of the Commission may elect.

7. If any state fails for two successive years to send one or more official representatives to the annual meeting of the Commission on Secondary Schools, the schools of that state may, by a vote of the Association, be dropped from the accredited list.

The Association is conservative, believing that such policy will eventually work to the highest interests of all. It aims to accredit only those schools which possess organization, teaching force, standards of scholarship, equipment, and *esprit de corps*, of such character as will unhesitatingly commend them to any educator, college, or university in the North Central territory.

II. STANDARDS

A. BUILDINGS

Standard 1. The location and construction of the buildings, the lighting, heating, and ventilation of the rooms, the nature of the lavatories, corridors, closets, water supply, school furniture, apparatus, and methods of cleaning shall be such as to insure hygienic conditions for both pupils and teachers.

All schools whose buildings are inexcusably inadequate and lacking in modern equipment may expect to have North Central Association accrediting privileges withheld from them.

Standard 2. The laboratory and library facilities shall be adequate to the needs of instruction in the subjects taught. The Association recommends the appointment of a trained librarian for each high school employing ten or more teachers.

B. ORGANIZATION AND ADMINISTRATION

Standard 3. No school shall be accredited which does not require fifteen units for graduation. The school year shall consist of a minimum of thirty-six weeks.

A unit course of study in a secondary school is defined as a course covering an academic year that shall include in the aggregate not less than the equivalent of one hundred twenty sixty-minute hours of classroom work, two hours of shop or laboratory work being equivalent to one hour of prepared classroom work.

More than twenty periods per week of academic subjects, or twenty-five periods including vocational subjects, exclusive of choral music and physical training, should be discouraged except in the cases of pupils having more than average ability.

Standard 4. The efficiency of instruction, the acquired habits of thought and study, and the general intellectual and moral tone of a school are paramount factors, and therefore only schools which rank well in these particulars, as evidenced by rigid, thoroughgoing, sympathetic inspection, shall be considered eligible for the list.

Standard 5. No school shall hereafter be accredited whose salary schedule is not sufficient to command and retain teachers whose qualifications are such

as required by this Association. The interpretation of this requirement shall be a matter of special responsibility for the state committee.

C. PREPARATION OF TEACHERS

Standard 6. All schools accredited by this Association shall maintain the following standards respecting teachers: (*a*) The minimum attainment of a teacher of any academic subject, and likewise of the supervisors of teachers of such subjects, shall be equivalent to graduation from a college belonging to the North Central Association of Colleges and Secondary Schools requiring the completion of a four-year course of study or 120 semester hours in advance of a standard four-year high-school course. Such requirements shall not be construed as retroactive. (*b*) The minimum professional training of a teacher of any academic subject shall be at least eleven semester hours in education. This should include special study of the subject-matter and pedagogy of the subject to be taught. Such requirements shall not be construed as retroactive.

The Association advises that the following types of courses should be offered as meeting the spirit of the standard: educational psychology, principles of secondary education, theory of teaching, special methods in subjects taught, observation and practice teaching, history of education and educational sociology. In the case of supervisors (and for the present transitional period only) the Association will, in applying this standard, take into consideration the record of their teaching and administrative experience.

D. THE TEACHING LOAD

Standard 7. (*a*) The number of daily periods of classroom instruction given by any teacher should not exceed five. The Commission will reject all schools having more than six recitation periods per day for any teacher. (*b*) The minimum length of a recitation period shall be forty minutes exclusive of all time used in the changing of classes or teachers.

For interpreting this standard in connection with laboratory work in science, and in connection with study-room supervision, a double period may be counted as the equivalent of one classroom exercise for teachers of academic subjects, provided that no combination of such work amounting to more than thirty-five periods a week be required of any teacher. For schools having some definite plan of supervised study, not more than five classes per day should be assigned to any teacher. The Association advises that the maximum be four.

Standard 8. No school whose records show an excessive number of pupils per teacher based on average attendance shall be accredited. The Association recommends twenty-five for a maximum. In general, no teachers of academic subjects should be assigned more than 150 student hours of classroom instruction per day, organized in not to exceed six classes per day.

E. PROGRAM OF STUDIES

Standard 9. The Association recommends that every accredited school offer units of work in mathematics, social sciences, languages (including English), natural sciences, the fine arts, and physical training. It further recommends the introduction of vocational subjects such as agriculture, manual training, household economics, and commercial subjects into schools where local conditions render such introduction feasible. The Association will hold that a sufficient number of qualified teachers must be provided to care adequately for all instruction offered. Not less than the equivalent of the full teaching time of three teachers may be given to academic subjects.

In conclusion, the work of the Association may perhaps best be summarized by quoting again from the Foreword of the official bulletin:

The aim of the North Central Association of Colleges and Secondary Schools is, therefore, first, to bring about a better acquaintance, a keener sympathy, and a heartier co-operation between the colleges and secondary schools of this territory; second, to consider common educational problems and to devise the best ways and means of solving them; and, third, to promote the physical, intellectual, and moral well-being of students by urging proper sanitary conditions of school buildings, adequate library and laboratory facilities, and higher standards of scholarship and remuneration of teachers.

That these aims are, to a large degree, realized is evidenced by the steady growth of the Association in territorial accessions, in number of affiliated and accredited schools and colleges, and in the power and prestige exercised throughout the country in respect to educational policies and practices. The Association is, beyond all doubt, the most generally recognized standardizing educational agency in the Northwest—if, indeed, it does not rank first in prestige in the entire United States.

Founded twenty-six years ago by a little group of foresighted men representing but a small number of institutions situated in a small number of states, the Association today includes in its territory 18 states, and in its membership 160 institutions of higher education and more than 1,200 institutions of secondary rank. Moreover, besides accrediting a goodly number of colleges and universities, the Association has this year stamped with its approval 1,372 high schools and academies.

SOME STANDARDS FOR HOME PROJECT WORK IN AGRICULTURE

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The purpose of this study is to point out some of the present tendencies in home project work carried on by pupils who have received agricultural instruction in Smith-Hughes departments of high schools. Standards are as desirable in the field of vocational agriculture as in other fields of education. Yet the writer prefers to regard standards in a new field as flexible and tentative. Therefore, he does not propose the adoption of any set rules or criteria for project work. He hopes to show the prevailing practices in various states and how far these practices have characteristics in common.

I. STANDARDS FOR HOME PROJECT PUPILS

TABLE I

REPORTS OF HOME PROJECT PUPILS IN AGRICULTURE, 1919–20

State	Total Number of Departments of Agriculture	Number Reporting	Number of Pupils Reported	Percentage Boys	Percentage Rural	Median Enrolment
Illinois	75	30	694	100	88	22
Indiana	50	20	646	84	91	21
Iowa	24	11	153	98	74	14
Kansas	32	14	230	100	85	14
Massachusetts	14	5	64	98	70	10
Minnesota	40	32	491	97	88	14
Missouri	43	18	374	91	85	20
Nebraska	29	18	268	100	76	15
New York	69	35	745	89	83	17
Ohio	61	27	503	100	94	19
South Dakota	12	6	93	100	52	16
Wisconsin	.....	6	272	82	64	32

1. Ninety-four per cent of the pupils in all the states were boys. There seems to be a strong tendency to confine home project work

in agriculture under the Smith-Hughes Act to boys. Girls should probably receive the instruction considered suited to their tastes and interests in the elementary school or in general agriculture classes in the high school.

2. Seventy-nine per cent of the pupils enrolled in this work in all the states were classed as rural. A strong tendency exists to consider rural pupils, rather than urban pupils, the ones to whom vocational instruction in agriculture should be given primarily. This indicates that the urban boy should manifest a genuine interest in farming as a possible vocation for himself before being enrolled for project work.

3. Having in mind the figures given in the last column of Table I, we raise the question whether in some states the number of pupils per instructor should not have been made smaller by discouraging urban boys and girls from undertaking project work. To supervise the project work of sixteen pupils in a satisfactory manner seemed to have been the average task of instructors in 1920. To increase the size of the project group for the sake of making a showing of numbers, or for the purpose of reducing the per capita cost of instruction, is doubtless poor policy, if it means the enrolment of pupils for whom agriculture has no vocational significance.

TABLE II

THE FARM EXPERIENCE OF HOME PROJECT PUPILS, 1919–20

State	Percentage Living on Farms	Percentage Had Lived on Farms	Percentage Had Worked on Farm as Laborers	Percentage Lacked Farm Experience
Ohio	94	4	1	1
Indiana	75	14	10	1
Iowa	87	9	1	3
Minnesota	86	8	2	4
Kansas	83	3	9	5
Missouri	85	6	2	7
New York	77	10	4	9
Nebraska	73	12	5	10
Wisconsin	67	6	17	10
Illinois	68	10	8	14
South Dakota	46	22	13	19
Massachusetts	64	5	10	21

4. Seven per cent of the pupils had had no farm experience. Pupils without farm experience were not inclined to perform home project work. It is possible that the farm boy who has moved to town or the urban boy who has worked on a farm may be influenced to choose farming as an occupation through successful project work.

5. The median age of home project pupils was: Kansas 17+, Illinois 16+, Iowa 16+, Missouri 16+, Ohio 16+, Minnesota 16+, Massachusetts 16+, Nebraska 16, Wisconsin 16−, New York 15+, South Dakota 15+, and Indiana 15+. Pupils with a median age of 16 were permitted to assume the responsibilities of project work.

TABLE III

THE PERCENTAGE OF HOME PROJECT PUPILS IN THE FOUR YEARS OF THE HIGH SCHOOL

	Kansas	Missouri	Nebraska	Illinois	Ohio	Iowa	Indiana	Minnesota	South Dakota	New York
First year..	44	39	37	36	35	36	37	35	33	34
Second year....	31	32	26	34	26	24	20	22	21	15
Third year.	16	20	20	19	21	22	12	11	10	12
Fourth year....	8	8	16	8	15	8	6	6	6	4
Total.	99	99	99	97	97	90	75	74	70	65

6. Seventy to 99 per cent of the pupils were enrolled in the high school, or 1 to 30 per cent in the elementary school or in the unclassed group. Fifty-four to 75 per cent of the pupils were in the first two years of high school.

The percentages of pupils who lacked requirements for entrance to high school were: New York 26, Minnesota 21, Indiana 14, Illinois 9, Massachusetts 9, Kansas 5, South Dakota 5, Wisconsin 3, Ohio 2, Nebraska 2, Iowa .7, Missouri .5. School authorities in at least four states encouraged pupils who had not completed the elementary school to enrol for project work. The percentages of home project pupils who were not in any school the preceding year were: Minnesota 14, Ohio 6, South Dakota 5, Kansas 5, Indiana 4, Iowa 4, Illinois 4, Missouri 2, Nebraska 2, New York 2, Massachusetts 1, Wisconsin 0. School authorities in nearly every state made some effort to enrol those young people who had dropped out

of school for various reasons. Apparently, in some states like New York, Indiana, and South Dakota, pupils of the elementary school were encouraged to do Smith-Hughes project work. In Minnesota the pupils who had dropped out of school constituted the majority of the group classed as non-high-school pupils or as specials.

7. The percentages of pupils receiving only six months' instruction in agriculture preparatory to project work were: Minnesota 64, Iowa 8, New York 1, and zero for the other states. Schools in a majority of the states did not deem it advisable to offer to high-school pupils courses shorter than nine months. It is worthy of note that Minnesota, having the largest percentage of pupils enrolled in six months' courses, likewise had the largest percentage of pupils who were not in school the year before. It is possible that other states will adopt the policy of carrying on intensive campaigns to induce many farm boys, educationally handicapped, to enrol for all the advantages that accompany supervised project work. Six months' courses, evening courses, or part-time courses seem desirable to make it easier for farm boys to receive instruction preparatory for project work.

II. STANDARDS FOR SPECIAL INDUCEMENTS TO ENROL FOR PROJECT WORK

1. The percentages of home project pupils who entered boys' and girls' club contests were: Indiana 76, Wisconsin 60, Minnesota 42, Missouri 27, New York 25, Illinois 24, Iowa 23, Massachusetts 23, South Dakota 22, Kansas 17, Nebraska 13, and Ohio 6. Apparently in some states objection was made to permitting pupils in Smith-Hughes project work to share in the prizes and special privileges of Smith-Lever club contests. Experiences of many states do not seem to warrant this objection.

2. The percentages of schools offering extra school credit for home project work were: Wisconsin 100, Illinois 80, Iowa 60, Indiana 30, Kansas 21, New York 17, Minnesota 15, Ohio 11, Missouri 3, Nebraska 1, and South Dakota and Massachusetts 0. The tendency seemed to be to offer extra credit in addition to that received for classroom work, especially in those states where nine

months' courses prevailed. One-fourth to one extra credit is given for successful project work. On this point many instructors appeared very uncertain, no definite policy having been established in the state.

III. STANDARDS FOR LOCATION OF PROJECTS

TABLE IV

LOCATION OF HOME PROJECTS

Percentage Located	Ill.	Ind.	Iowa	Kan.	Mass.	Minn.	Mo.	Neb.	N.Y.	Ohio	S.D.	Wis.
On home farms	72	84	80	78	.....	85	82	75	86	92	46	77
On other farms	7	5	20	9	.....	8	8	9	3	4	9	5
On school plots	2	1	0	3	.....	.4	3	2	1	.2	0	4
On urban lots	19	11	0	10	.....	6	7	14	9	4	45	14
Within 3 miles of school	49	43	33	38	51	31	35	53	61	35	72	47
Within 6 miles of school	31	40	51	30	31	34	25	34	29	47	14	35
Within 15 miles of school	18	14	10	23	10	24	32	9	9	17	12	15
Over 15 miles from school	3	3	6	9	8	10	9	4	1	1	2	4

1. Table IV points out that, in all states but two, at least three-fourths of the projects were located on farms where pupils lived; that a small percentage of projects were located on farms where pupils did not live permanently; that the school plot was used very infrequently as a place for Smith-Hughes project work; and that many urban pupils attempted to receive vocational instruction in agriculture through projects located on village or city lots. No serious objection can be made to an urban boy doing project work, provided he chooses to do so under natural farm conditions.

2. Forty-five per cent of the projects were located within 3 miles of the schools, 34 per cent within 6 miles, 17 per cent within 15 miles, and 3 per cent beyond 15 miles. Project work was carried on within a radius of 15 miles, or the trade territory of the community. Greater distances are liable to be the cause of poor supervision of projects.

IV. STANDARDS FOR SELECTING PROJECTS

1. The percentages of pupils selecting general farm practice were: Iowa 53, Massachusetts 13, Illinois 11, Minnesota 5, Missouri 2, Nebraska 2, Wisconsin 2, New York 1, Indiana .3, and Kansas, Ohio, and South Dakota 0 each. A definite phase of

farm work on which the pupil may put intensive study, for which he may assume full responsibility, for which he may keep accurate farm records, and from which he may receive financial benefit is accepted as a standard in all the states except one, Iowa. Even in this state, 104 definite projects were reported, or only 5 out of 11 schools reported no definite project work.

2. For Minnesota in 1918–19, 58 per cent of the pupils studied farm crops and 45 per cent selected farm crop projects; 20 per cent studied animal husbandry, and 16 per cent selected animal projects; 14 per cent studied horticulture and 10 per cent selected horticultural projects; 5.7 per cent studied farm management and 5.4 per cent selected projects in farm management; 2.5 per cent studied soils and 2.5 per cent selected projects in soils. Thus it appears that pupils may be expected to do project work that is closely related to the courses pursued in the classroom.

3. Corn was selected as a plant project by the largest percentage of pupils in the following states: Illinois 48 per cent, Indiana 44 per cent, Iowa 43 per cent, Kansas 43 per cent, Missouri 81 per cent, Minnesota 50 per cent, Nebraska 60 per cent, Ohio 65 per cent, and South Dakota 56 per cent; potatoes in New York 38 per cent, gardens in Massachusetts 80 per cent, and Wisconsin 34 per cent (corn 29 per cent and potatoes 28 per cent). A leading crop of the community was selected as a project, except in those states where urban pupils took garden projects. The same principle governed the choice of animal projects: swine in Illinois 50 per cent, Indiana 48 per cent, Iowa 34 per cent, Kansas 55 per cent, Missouri 56 per cent, Minnesota 42 per cent, Nebraska 61 per cent, Ohio 55 per cent, Wisconsin 38 per cent; poultry in New York 58 per cent. Dairy and beef projects did not appear in as large numbers as one might expect for the reason that swine and poultry projects are more easily organized, represent smaller investments, and yield quicker returns.

4. The cultivated crop, like corn or potatoes, was preferred over a small grain project (Illinois 9 per cent, Iowa 36 per cent, Kansas 31 per cent, Minnesota 10 per cent, Nebraska 11 per cent, Ohio 4 per cent, South Dakota 4 per cent), the latter not possessing the educational values of the cultivated crop.

5. Twenty-seven kinds of plant projects and 10 animal projects were selected, besides 12 miscellaneous projects. Onions, alfalfa, sugar beets, sweet potatoes, asparagus, mangels, tomatoes, melons, strawberries, beans, orchard, soy beans, tobacco, pop corn, sweet corn, cabbage, grapes, clover, small fruits, sweet clover, cantaloupe, bees, rabbits, and turkeys were the choices of a few pupils. Some of these, like onions, sugar beets, and bees, cannot be questioned as to their value as major projects. Others may serve well as minor or associated projects, like alfalfa with a dairy project. Apparently, pupils had liberty to plan and execute projects suited to their interests, even though these interests may not have represented a leading phase of farming. Fortunately these interests seemed to conform largely to the best farm practice of the community.

V. STANDARDS FOR SIZE OF PROJECTS

1. The median size of 57 corn projects completed in Minnesota in 1919 was 10.1 acres. With the exception of one state in 1920 ($\frac{1}{8}$- to 2-acre projects), the minimum size of corn projects in all states hovered around 5 acres. There seemed to be a strong tendency to make the size of the project large enough to cause the records obtained therefrom to represent normal farm records of labor and cost, to give sufficient opportunities for skill and management, to give ample financial rewards, and to warrant the respect of the boy for his job.

2. The median number of hours spent on 52 corn projects completed in Minnesota in 1919 was 201, with a range of less than 50 to over 950 hours. This great range in hours may have been due, possibly, to carelessness in keeping records, to the number of operations included, and to the number of acres for the projects. Apparently, projects may be so planned and carried out that at least 200 hours will be recorded by pupils for their labor.

VI. STANDARDS FOR SUPERVISION OF PROJECTS

1. The average number of visits made to projects by instructors in Minnesota in 1919 was 0.4 in March, 6 in April, 13 in May, 19 in June, 13 in July, 12 in August, 2 in September, and 1 in October, the average number of projects visited for the season being 14 per

instructor. Visiting of projects did not become general until May, although many boys had started their swine and poultry projects somewhat earlier than May. Visiting ceased almost entirely during September and October, when boys must have been busy with harvesting their corn crops or with fattening their pigs. As the purpose and possibilities of project supervision become more fully understood by instructors, it is possible that visits will start at least when the boy begins his project and continue at least until he finishes his project and completes his records.

VII. STANDARDS FOR COMPLETION OF PROJECTS

1. Projects were completed in Minnesota in 1919 as follows: orchard 100 per cent, wheat 93 per cent, poultry 75 per cent, corn 70 per cent, potatoes 70 per cent, oats 67 per cent, gardens 66 per cent, dairy cattle 66 per cent, swine 55 per cent, and beans 25 per cent; for all projects 70 per cent. It seems possible for instructors to cause the carrying-out of projects to the final stage of rendering financial summaries and writing accounts of project methods and results; some failures must be expected as in other phases of school work. Project workers need stimulating, sympathetic instruction and direction throughout the entire project period. For the completion of the project the instructor should feel a great responsibility.

2. Projects in Minnesota in 1919 were completed according to original plans as follows: wheat 76 per cent, poultry 65 per cent, corn 64 per cent, orchard 63 per cent, garden 59 per cent, swine 55 per cent, potatoes 52 per cent, dairy cattle 27 per cent, oats 25 per cent, beans 20 per cent; for all projects 56 per cent. It appears that instructors allowed pupils to change their projects. This is not an altogether objectionable practice, if the changes do not involve too great a departure from the problems considered in the originally planned projects. On the whole, it seems desirable to expect pupils to make definite plans for projects and to hold them responsible for completing the same.

3. The yields obtained from corn projects in Minnesota for 1919 ranged from 20 to 120 bushels; the median was 56.5 bushels for 57 projects. In 75 per cent of the projects the yield exceeded

the average yield in Minnesota for that year. It seems fair to expect that project returns will exceed the returns of the average farm. Vocational instruction may not merit the confidence of fathers and neighbors unless this achievement is realized.

4. The cost of producing corn per bushel in Minnesota for 1919 ranged from 19 cents to $1.35; the median was 49 cents for 51 projects. This range, of course, is due partly to varying yields. But many figures were faulty, evidently because all items of cost were not accounted for, and too low charges for labor were made. Boys with potato projects secured a median cost comparable to the farm average of the state. Accurate cost-accounting seems to be a desirable feature of project work.

5. The average net profits derived from projects in Minnesota for 1919 were: oats $885, corn $359, dairy cattle $259, wheat $185, potatoes $148, swine $69, poultry $33, orchards $22, and gardens $22. Seven projects only were completed with losses. Profits varied according to size of projects, weather conditions, etc. It seems desirable that the boy should make a profit on his labor. This is not the principal aim of vocational training, but it is a useful means of arousing interest.

The standards presented seem to represent the prevailing practice in home project work in agriculture. Some are easily attainable and some may be impossible in certain states or schools because of local conditions. But representing the combined judgments of those school authorities who have been the first to attempt the solution of the many problems of vocational agriculture, with many evidences of significant results, these standards may be useful tentatively to the great numbers of other school authorities who, it is hoped, will become interested in the education of farm boys through properly organized and supervised home project work.

THE FREEMAN-RUGG GENERAL INTELLIGENCE TESTS AS AN AID TO ECONOMY IN SCHOOL ADMINISTRATION

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During the past few years school men, engaged in formulating and applying general intelligence tests, have directed their efforts largely in two directions: in the first place, it has been necessary to devise tests so closely related to school work that they indicate the varied ability of students in the classroom; in the second place, it has been necessary to convince the public that testing is desirable. Although at present the tests have not been perfected and the public has not fully realized the value of testing, the time has come to consider the success of tests now in use and to study the means of applying these tests to the solution of practical school problems.

The Burlington High School segregates students in ability groups. The original plan grouped approximately fifty, seventy-five, or one hundred students in one class. This class we arbitrarily divided into two, three, or four equal sections; a teacher was assigned to each section. At the end of six weeks of school work the teachers of the several sections in consultation attempted to rank the students on the basis of their ability to do good school work. The students were then reassigned to ability groups, designated A, B, and C. From time to time, as the character of the work of individuals changed, transfers were made from group to group.

I shall not attempt to discuss the merits of segregating students into ability groups as a means of taking into account individual differences. Granting that such a practice is good, it is obvious that the method of segregating suggested in the preceding paragraph has many disadvantages. To begin with, it means almost a complete reassignment of pupils at the end of the first six weeks

of school. Moreover, we find that a teacher's judgment of his pupils, based on six weeks' class experience, is not sufficiently reliable. Many additional transfers are required after the students have been ranked and reassigned by the teacher. Apparently any method of segregating students into ability groups will cost more than it is worth unless some reliable means are devised for placing students at the time of registration. On the other hand, the school program must be so organized that it is apparent to both students and teachers that transfers can and will be made from group to group as the changing character of the work of individuals demands.

We began to use the Freeman-Rugg General Intelligence Tests in the fall of 1919. Near the end of the first term of six weeks two experienced teachers were selected to assist the principal, so that we were able to give the tests to the English classes during the four supervised-study periods of one day. At the end of the same day we gave the tests to all students not enrolled in English classes. Since that time it has been our custom to give the tests to the eighth-grade graduation classes in their own elementary schools. At frequent intervals we have given the tests to all who have entered our school from outside our own school system. Results, scored according to uniform standards, have been entered upon the record cards in the office. Additional information, such as the number graduating in the student's own elementary-school class and his rank in that class as estimated by the principal and teachers of his school, has been recorded on these cards. It is therefore possible to learn from office records the point score of a student in the test, his grade-school rank, and his grades in high-school subjects, provided he has been in school one or more semesters.

Consequently we have on file complete information upon which to rank students. Various methods of determining these rankings have been tried. I have already suggested the method of placing students, indiscriminately ranking them on the basis of the judgment of teachers at the end of six weeks. It has been practical to place students in groups on the basis of ranking derived from tests, and then at the end of six weeks re-rank them on the basis

of teachers' judgments. When this has not been feasible, entering Freshmen have at registration been placed in groups on the basis of their rank in the test and their rank in their eighth-grade graduation class. At the end of a week, themes have been written under standardized conditions, corrected, and the necessary transfers immediately made. Assignments have been made to Sophomore classes in English on the basis of the test rank combined with grades in Freshman English; to classes in geometry on the basis of the test rank combined with grades in algebra; to classes in history on the basis of test rank and their last English grade. All of these assignments have been subject to change as the character of the work done by the student made the need of a change in his work evident.

If any test is to be of value, it must show a high degree of reliability for securing the specific measurements desired. It should be clear that the primary value of a test is that it should indicate the character of work that a student will do in a given class to which he is to be assigned. The only way that one can measure the reliability of a test is to compare the manner in which it ranks students with some other method of ranking. Usually this will be a ranking derived from the judgment of one or more teachers.

In the fall of 1919 we indiscriminately assigned ninety Freshmen to four sections of English I, all meeting the first period of the day. Had we followed our old plan, we should have reassigned them at the end of the first six weeks, assigning the best twenty-eight students to Section A, the next forty-six students to two B sections, and the remaining sixteen students to Section C. The natural laws of chance would have operated to cause the transfer of fifty-six students, or 62 per cent of the class. A comparison of the ranking of the tests and the actual ranking which the teachers gave at the end of six weeks shows a positive correlation of 52 per cent. Had we placed the students at registration day on the basis of the tests and reassigned them at the end of six weeks on the basis of teacher judgment, there would have been a greatly reduced percentage of transfers.

Considering these data from another point of view, we see that to be of value tests need not rank students in the same identical order as would the teacher; we do not use them that way. What we need is to be able to divide pupils into relatively large groups. On comparing the two rankings, we found that of the 28 students placed by the tests in Group A, the teachers placed 15 in Section A, 10 in the B sections, and 3 in Section C. Of the 46 placed by the tests in the two B sections, the teachers placed 12 in Section A, 30 in the two B sections, and 4 in Section C. Of the 15 placed by the tests in Section C, the teachers placed 1 in Section A, 5 in the two B sections, and 9 in Section C. A total of 36 would have been transferred. This would have meant a transfer of 39 per cent as compared with the 61 per cent resulting from a chance assignment.

But 39 per cent of pupils transferred from the original assignments is still too large a number. The 39 per cent transfer was derived on the assumption that whenever the test rank differed from the teachers' rank the former was wrong and the latter was right. We now consider that each method of ranking should be given equal value. Taking the ranking of the tests and the ranking of the teachers and combining to secure a final ranking, we find that of the twenty-eight students whom the test placed in Section A, twenty would have been left in Section A, eight transferred to the B sections, and none to Section C. Of the forty-six whom the tests assigned to the B sections, eight would have been transferred to Section A, thirty-four left in the B sections, and four transferred to Section C. Of the sixteen whom the test placed in Section C, the test rank placed none in Section A, four in the B sections, and twelve in Section C. Had this method been followed there would have been a total transfer of twenty-four individuals, or a 27 per cent transfer as compared with the original 62 per cent transfer resulting from a chance assignment. This method has since been used and has been found to operate in accordance with the figures just given.

Although the method just described greatly reduces the probability of transfer at the end of the first six weeks of school, we

are desirous of finding some means of making required transfers earlier in the school year. This fall at the end of the first week of school we had one hundred and seventy-five Freshmen write a theme under standardized conditions. These themes were graded A, B, C, D, and E, following closely the normal distribution curve. The students' intelligence scores were also divided into five groups, likewise following the normal curve. From these two grouped rankings we calculated the regression coefficient and found a correlation of 58 per cent. Combining the rankings of the tests and the themes, we regrouped the students at the end of the first week. Although this earlier readjustment has operated to increase subsequent transfers, the success of the method has been sufficient to justify its continuation.

It will be seen, therefore, that, for the purpose for which we use them, the Freeman-Rugg Intelligence Tests have a high degree of reliability. The question might be raised as to why there should not be a higher degree of agreement between the results of tests and teachers' judgment based on classroom observation. The following study based on data derived from the ninety students in Freshmen English may be of interest. Three students ranked A by the tests were placed in Section C by the teachers. A study of these three revealed that one was a cigarette fiend who was putting practically no effort into his school work. He has since raised his work to the standard required of the B sections. Another was a country girl who had never read a book or written a letter. English was poorly spoken in her home. The third was a girl in such poor health that she was absent from school more than half of the time during the six weeks upon which the teacher's judgment was based. Moreover, of the forty students ranked B by the tests, thirteen were ranked A by the teachers. Investigation showed that these students were of average ability and succeeded through hard, conscientious work. The one student whom the tests ranked C and the teachers ranked A, a girl of nervous temperament, had done herself an injustice in the test. She continued to do good work. Of the other students ranked C in the test, not one ever succeeded in doing good work in the high school.

Recognizing that forces other than those measured by the tests contribute to success in school work, we have tried to combine with the test rank some other ranking based upon such items as effort, regularity of attendance, health, home life, and the many other factors that contribute to success in school. These cannot be measured by general intelligence tests. Whenever a student has been in school a semester we have used school grades to supplement the test grades. This practice has brought about good results. In the case of incoming Freshmen we have given equal value to the ranking of the test and the ranking of the grade-school teachers. This is not so satisfactory as it should be because different standards are used by different schools.

The degree of correlation between the ranking given students by their own schools and the ranking of the tests ranges from a negative correlation in one school to a positive correlation of 91.55 in another school. Last year at the end of the first semester we ranked the grade schools of the city. We placed first the school whose ranking agreed most closely with the ranking of the tests; we placed last the school whose ranking agreed least closely with the test rank. At the end of the second semester we again ranked schools, using the same basis for their order. There was a positive correlation of 16 per cent between the two rankings. This indicated that the teachers whose ranking agreed rather consistently with the ranking of the tests probably based their estimates on the elements measured by the test. In the same way we concluded that teachers whose ranking disagreed consistently with the ranking of the test probably based their estimates on elements that are not measured by the test. Again, the fact that the test and the high-school teachers' rankings more nearly correlated than did similar rankings by grade teachers convinced us that high-school teachers are likely to emphasize most the qualities measured by the tests and that, in general, grade-school teachers are inclined to take into consideration qualities other than those measured by the tests. I realize that data secured from two semesters only are not sufficient to justify putting too much confidence in this conclusion. However, since the primary effort is to secure some data that will

supplement information received from the tests, and since the evidence suggests that the grade-school teachers, in making their rankings, do emphasize qualities that are not measured by the tests, we have decided to use the ranking of the grade-school teachers as an aid to interpreting doubtful cases of assignment. In the end, however, a student's ability to do the work of a section is the criterion that determines the final placement. What we desire of the test is that it shall give us information in advance that will reduce the necessity for numerous transfers after registration.

Our experience indicates that the giving of tests is worth while. The Freeman-Rugg tests have been reliable when compared with other judgments that we have been able to make. They are simple and easy to give. They are group tests and are therefore practicable for use in large numbers. They are point tests; they make possible ready comparison of scores. May I repeat that we have given these tests for the purpose of placing students so as to reduce materially the number of transfers. We have found the Freeman-Rugg tests most reliable when used in connection with some other estimate that tends to take into consideration such qualities as willingness to work, perseverance, health, regularity of attendance, home life, and the general spirit of co-operation.

GRAPHICAL REPRESENTATION OF GRADES OF HIGH-SCHOOL PUPILS

ELBERT ALLEN
Formerly, University High School, University of Chicago

A report made to a pupil that he has received a certain grade in a test does not vividly inform him just how he ranks with respect to his fellows or how his present mark compares with his records in preceding examinations. In order that a pupil may readily make the comparisons suggested, the Department of Mathematics in the University High School of the University of Chicago, designed a set of three cards upon which test grades may be graphically represented. The intention is to increase pride in accomplishment through friendly competition. Results of successive tests are posted in such a way that each pupil may compare his record with the records of his classmates, experiencing the satisfaction of standing near the top, or feeling keenly the need of greater effort in the future.

Figure 1 is known as the class graph. The size of the card, about sixteen by twenty inches, may vary, depending on the number of pupils and the number of tests to be recorded. The numbers at the top of the card give the percentages made on the different tests. The 60 line is the passing mark. The numbers at the left in Figure 1 denote the pupils' numbers in the Department of Mathematics. At the beginning of the year each pupil is given a number which appears in place of his name on all records posted or otherwise made public. This is done in order to spare the slower pupils the embarrassment of having their failures advertised. Other students who desire to compete openly with their classmates may disclose their numbers if they desire to do so. Thus the leaders of the class are usually not in doubt as to their keenest competitors.

The class graph is placed on the bulletin board. After each test the teacher draws upon it the lines which represent the grades.

The graph enables the teacher to view the work of the class as a whole. While the appearance of the card is sometimes very discouraging to the teacher, nevertheless, it inspires him to make an earnest effort to help more pupils over the dead line and to induce those already over to improve their standing.

A large number of boys are interested in athletics. To a boy, it is a source of intense joy to be able to outrun, outjump, outplay

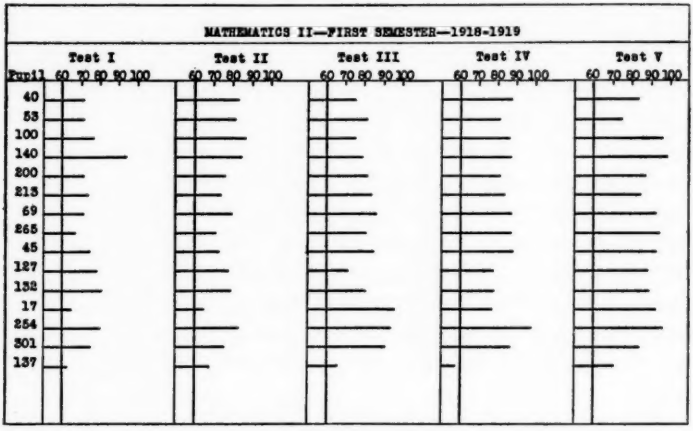

FIG. 1

his companions. The graphical representation (Fig. 1) can be easily compared to a hurdle race. The 70, 80, and 90 lines are hurdles which the pupil must clear before he can win the prize—the 100 line. If he fails to clear the hurdle represented by the 60 line, he has failed to place in the preliminaries and therefore is required to undergo extra training. As he is perfectly willing to give up some of his pleasures and to devote extra time to train for a field meet, so, if his standing in mathematics is presented to him as a sporting proposition, he will as freely make a more concentrated effort to prepare himself to excel in clearing the mathematical hurdles. Girls will try to show the boys that they can beat them at their own game.

The individual score card, four and one-half inches wide and ten inches long, gives graphically the entire history of the student's

grades in mathematics in all tests taken from the time he enters school until he leaves. Provision is made for fifteen tests per year for four years, and for the average grade made each year. The 60 line indicates the passing mark, and the 100 line the goal toward which the pupil is striving. The numbers at the left of each division give the number of any particular test. After each test a dot is placed in the proper column on the line that gives the number of the test. For example, if the student makes 85 per cent on the sixth test, a dot is placed six lines down on the 85 line. This dot is then connected with the dot that represents the grade made on the preceding test. Thus, at the end of the year, the card contains a graph which shows the nature of the student's work in mathematics for that year. The pupil is given one card for his own record, and the teacher keeps one for his files.

It was suggested by the pupils that they might use the four divisions on the mathematics card for records made in all the studies, for example, a separate graph of history, Latin, mathematics, and English. Figure 2 shows the mathematics card of one student used to represent his showing in four subjects for one semester. Each semester he may have another card to use in the same way. A card could readily be made providing space for grades less than 50 per cent so that a record could be kept of how seriously a pupil was failing.

Figure 3 shows the records of four pupils for one semester. Each represents a specific type of graph. A made 95 per cent on the first test and 100 per cent on each of the following tests. No computation is required to determine her grade for the semester. B made a low grade on the first test but improved her position on each succeeding test. C's record is erratic, showing a deviation of 31 per cent, possibly caused by sickness or by some other unavoidable reason. D made a very low grade on the first test and a lower one on each of the four following tests. While the writer was planning these cards, he drew D's graph and asked her to look at it. Immediately she declared that the graph must stay on the right side of the passing line. The result is shown by the mark on the sixth test, not a very high mark to be sure, but an improvement upon the others. The backward trend of the curve to the left

The University of Chicago

The University High School

MATHEMATICS DEPARTMENT

Pupil Davis, Ruth

Teacher	Teacher	Teacher	Teacher
Mathematics 1918-1919	English 1918-1919	History 1918-1919	Latin 1918-1919

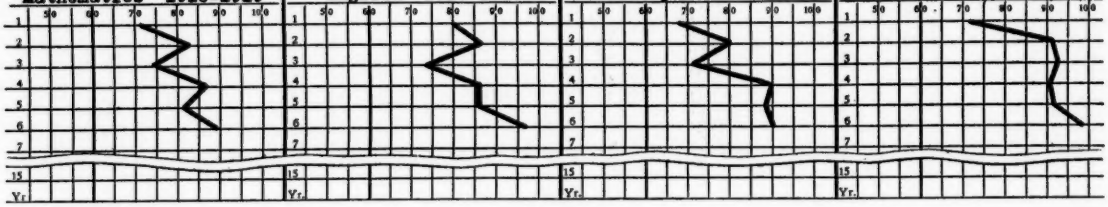

FIG. 2

The University of Chicago

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MATHEMATICS DEPARTMENT

A	B	C	D
Teacher	Teacher	Teacher	Teacher
MATH. I. 19 -19	MATH. II. 19 -19	MATH. III. 19 -19	MATH. IV. 19 -19

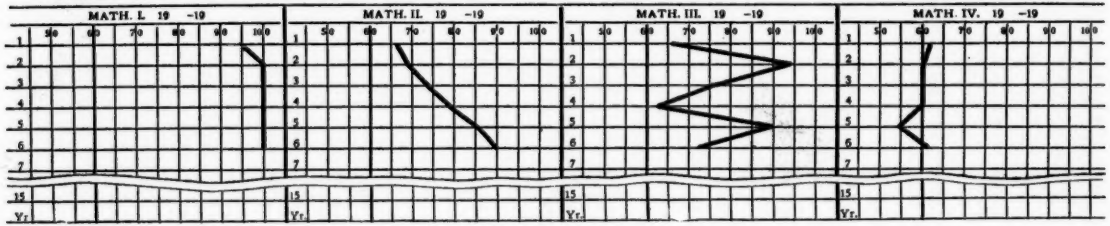

FIG. 3

of the passing line made an indelible impression on the pupil's mind.

By a glance at his individual card, the student can see whether he has improved his grade or has failed to measure up to his former record. One whose curve consistently approaches the 100 line will have great pleasure in proving to his parents or friends that he

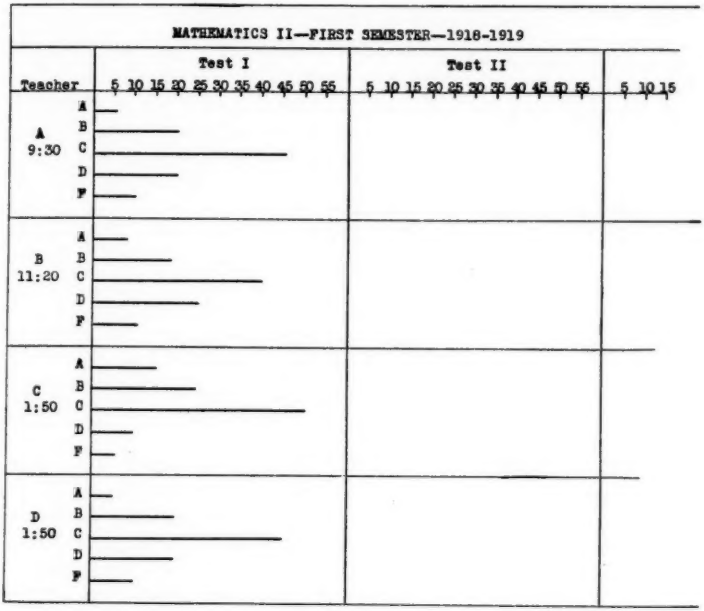

FIG. 4

is doing better work each time. The curve that constantly approaches the failing line will awaken in the owner the vital necessity of improving his work.

Figure 4 shows the percentage of A's, B's, etc. for each of four classes, taught by teachers A, B, C, and D, which had taken the same test. By studying this graph, teachers and pupils can compare their results with the results in other classes, a comparison which is valuable especially for teachers and school officials. Of course, such comparison of classes does not necessarily indicate the relative abilities of the teachers.

Educational Writings

REVIEWS AND BOOK NOTES

A program of high-school instruction.—The aim of a useful and suggestive, though not profound, book[1] of recent issue is to set forth the function of the high school as an agency in social adjustment. It emphasizes instruction, not as an individual experience with an eye to understanding the past, but as a social experience with a look toward the future. It proposes substitutions of up-to-date material for the traditional content of the high-school curriculum.

A bit local in its flavor and a bit superficial in its treatment of the problems involved, this book has the merit of being simple and clear in its exposition of the social viewpoint and very concrete and practical in the material which it presents, whether this is illustrative or constructive. Its roots do not go very deeply into scientific or philosophical subsoil, but the creation itself is especially worthy of the attention of the teacher and principal who are striving to get away from the old but who have so far not seen the way out. This treatise tells interestingly what is being done in the direction of socializing courses of study and classroom procedure. Furthermore, it does this in a non-technical and helpful manner.

There are chapters on "Instruction in the Prescribed Subjects of the Junior High School" (56 pages) and "Problem-Project Instruction," as well as four successive chapters on the senior high school in which the authors show various social needs to be served, as follows: mastery of English, physical well-being, knowledge of contemporary history, knowledge of government, vocational preparedness, and capacity for wholesome recreational activity. The material under these heads is pertinent. It dips into business and professional life today and carries us far from the idea that a school is something set apart from the community in which it exists.

There are suggestive curricula and organizations of high-school subjects. On pages 131–34 there is a new set of standards for scoring the effectiveness of "socialized" and "project" class exercises, including a rating scale for measuring the teacher's efficiency. Finally, there is a bibliography, the references in which arew, ith few exceptions, less than five years old. On the whole, the book is a helpful manual for school folk wishing to get the social point of view.

MORTON SNYDER

[1] HERBERT G. LULL and H. B. WILSON, *The Redirection of High School Instruction.* Philadelphia: J. B. Lippincott Co., 1921. Pp. 286.

A new exposition of project teaching.—The four or five books which have so far appeared on the project method of teaching have each left us hoping for a more concrete or a more systematic treatment. Professor Stevenson's new book[1] is a decided step toward such an end, for it is both well organized and replete with illustrations. Beginning with a careful exposition of his interpretation of the project, Mr. Stevenson goes on to contrast this with the more common types of teaching, to compare his own definition with many others that have been proposed, to contrast projects with problems, to work out some of the psychological implications of the project, to show what the project means for the curriculum, and then to give numerous examples of project teaching in colleges, high schools, and elementary schools. The contrasts between project teaching and each of the older types of teaching, together with the numerous illustrations of projects and near projects in various schools, ought to help in clearing up the very prevalent confusion as to just what is and what is not a project. One who has attempted to get project teaching demonstrated for students will realize how little the teacher is affected by one's giving abstract definitions, and how very far even good teachers usually are from seeing what this new movement is all about.

A project is here defined as a problematic act carried to completion in its natural setting.

> In this definition it is to be noted that: (*a*) there is implied an act carried to completion as over against the passive absorption of information; (*b*) there is insistence upon the problematic situation demanding reasoning rather than merely the memorizing of information; (*c*) by emphasizing the problematic aspect the priority of the problem over the statement of principles is clearly implied; and (*d*) the natural setting of problems as contrasted with an artificial setting is explicitly stated [p. 43].
>
> The term "problem" is largely intellectualistic in its connotation, and if it were used exclusively it would have a tendency to overemphasize the intellectualistic aspect of school work. The project, on the other hand, lays emphasis not only on the problematic situation but also on the possibility of carrying it to completion [p. 94].

An excellent summary of the periodical literature on projects and problems is included which will save the reader many hours of library reading. A twenty-page bibliography forms an appendix.

The book contains little that is new, except the illustrations, and little that is profound. Being largely an expansion of Mr. Stevenson's excellent journal articles on the project, and a collection and comparison of other views, it is necessarily a kind of résumé—albeit a needed résumé. The psychological and philosophical background is filled in with extracts from the writings of Dewey, Charters, and others. So numerous are the citations, in fact, that the treatise impresses one sometimes as simply a series of correlated quotations. The thinking that now needs to be done in the way of clarifying the conceptions underlying the project has again been postponed. Real thinking has been done,

[1] JOHN ALFORD STEVENSON, *The Project Method of Teaching*. New York: Macmillan Co., 1921. Pp. xvi+305.

however, in the direction of the application of project ideas to college teaching. The use of the project plan in courses in engineering, law, medicine, journalism, insurance salesmanship, and modern languages brings vividly before one the large changes which the project method of teaching is likely to bring about within the next few years in the professional schools.

D. L. GEYER

CHICAGO NORMAL COLLEGE

A complete project curriculum.—Despite the present extraordinary vogue of the project in all its phases, a course of study based exclusively upon the working out of a single great annual project for each grade is still sufficiently striking to command attention. To attention must be added respect when, as in this case, the program described is so far workable at least as to have afforded a fruitful year's activity for the primary grades of the model school of a state normal school, and that in face of the fact that the teachers in charge were merely students in training changing every ten weeks or oftener. This latest volume[1] of the "Lippincott School Project Series" is in fact a careful account of a real experiment instituted by the author in her capacity as supervisor of the three primary grades.

The avowed object of this experiment was, in accordance with the pronouncements of numerous leaders in educational thought, the "formulation of a curriculum which shall answer life's demands because it *is* life, and . . . . permits the child to live in the school as naturally and as wholly as he lives out of it" (p. 1). The first step toward the attainment of this end—a sort of practice exercise preparatory to the central undertaking—was the production by the three grades in co-operation of a mammoth fair exhibit, modeled upon the state fair held in the city at the opening of the term and attended by all children as a part of their school work. On the completion of this enterprise, the children of the third grade were led by the supervisor to vote for the development along similar lines of a model city, reproducing the more prominent features of their city and of municipal organization in general. The first grade then elected to co-operate with a game of "families," involving a study of the essential features of home life in this and other lands and the construction of fully equipped and well-peopled houses for the miniature city. In the same manner, the second grade chose to "play store," building and stocking their places of business, studying commodities, production, transportation, costs, and money arithmetic; while the third grade, as the most mature element in this small community, retained responsibility for a general oversight of the whole, and in particular for the construction of the ground plan of the city, the laying out of canals, bridges, streets, pavements, public buildings, and factories, the editing of a newspaper, and the organization of duly elected departments of health, police, street-cleaning, finance, and public works, each

[1] MARGARET ELIZABETH WELLS, *A Project Curriculum*. Philadelphia: J. B. Lippincott Co., 1921. Pp. ix+338.

performing an appropriate and real function in the common life of this novel group.

With the exception of brief interruptions for special activities appropriate to Thanksgiving, Christmas, and other holidays, the execution of this project was found to provide ample material for the entire year of school work. At the close of the term, the whole culminated fittingly in an attractive intergrade festival and pageant, illustrative of the subject-matter which had been covered. Following this, the children were allowed to carry home the products of their own efforts.

The latter half of the book is devoted to an elaborate and thoroughgoing defense of the plan as outlined. Propounding eight formal theses as ground for the adoption of such a curriculum, the writer proceeds to justify these severally by a multitude of quotations from eminent educators, supported by references to her own experience. This is followed by a fifty-page list of facts taught, skills begun, and habits, attitudes, appreciations, and ideals inculcated during the work of each grade on the several major projects. These alleged results are carefully itemized, classified, and eventually summarized in an imposing numerical table. More could scarcely be asked of an initial experiment of this character. It is, however, to be regretted that no objective evidence is yet available regarding the extent to which the various facts and skills described as covered in the class work have actually been mastered by the individual pupils. While it is entirely possible, even probable, that a majority have really acquired most of the ordinary subject-matter of these grades, and that in a more readily functioning form than results from the customary school practice, yet the widest range of opinion on this point is inevitable until such a curriculum has been repeated under experimental conditions with provision for the accurate measurement of resulting attainment. It is only fair to point out that the author is herself quite aware of this necessity and indeed urges the conducting of such an experiment in other quarters, though contending with reason that many of the most valuable products of such a régime will not lend themselves to evaluation by any of the measuring instruments now existing.

Miss Wells's condemnation of present school practice in the primary grades is probably at times unduly severe. As might be expected, the "minimal essentials" movement comes in for vigorous criticism at the hands of this avowed champion of a "maximal" program. The true value of the author's immediate contribution does not, however, depend upon the acceptance in full of any particular philosophy of education, and the open-minded reader can scarcely fail to find the entire account most stimulating reading, regardless of any exceptions which he may take to details.

Psychology and moral training.—Recent years have witnessed the appearance of numerous psychological and educational writings designed for use in the fields of moral and religious education. Among the more recent of such is

Professor Tracy's *The Psychology of Adolescence.*[1] As the author states, the aim of this book is not to present the results of original investigations, but to put into the hands of the teacher of moral or religious education a comprehensive survey of this important period of life. The aim is avowedly a practical one, and the earlier chapters, which are the occasion for the title "Psychology," are by way of introduction to the conclusions in the fields of esthetic, moral, and religious valuation and of pedagogical procedure, which constitute the last four chapters. That the author is a faithful disciple of Plato is obvious throughout, and the ideal of life which dominates the presentation may be termed the Greek ideal of all-around self-realization.

While it is apparently the author's desire to give a dynamic and functional account of mental life as a whole, and more specifically of the adolescent years, the treatment is not at all free from the structuralistic terminology and implications so common a generation ago, e.g., "Intellect is the organ of cognition" (p. 84). The critical reader will complain of the frequent descriptions of the "powers" and "faculties" in contexts and language which, in spite of precautionary statements which indicate the author's realization of the danger of this sort of thing, too easily imply that these functional abstractions are semi-independent dynamic agencies.

The book makes no real contribution to the literature of adolescence, either by way of new data or new interpretations; nor, perhaps, does it pretend to. While the reader who is even slightly versed in this literature will find nothing new, yet it may be that the description of the adolescent, with his characteristic emotional instability, his idealism and romanticism, and his susceptibility to social stimuli, will be enlightening to the novice who gets from its pages his first introduction to the subject; and it is perhaps just the novice for whom the author is writing. Indeed, the novice it is who bears altogether the disproportionate share of the burden of moral and religious education.

The bibliography, while by no means exhaustive and lacking in those descriptive comments which do so much to make a bibliography helpful to a beginner in a new field, contains a considerable number of references to the literature of moral and religious instruction as well as of the adolescent period.

F. A. KINGSBURY

UNIVERSITY OF CHICAGO

Psychology for teachers.—One of the problems of teacher-training curricula which has recently received a great deal of attention concerns the kind of psychology which should be included in such curricula. From many quarters there has been criticism of courses in "general psychology" as being too far removed from a study of those problems of child nature with which the teacher

[1] FREDERICK TRACY, *The Psychology of Adolescence.* New York: Macmillan Co., 1921. Pp. xi+246. $3.00.

must deal. The plea has come for textbooks in psychology which shall be more within the range of teachers in training than are most texts so far provided.

In explanation of the purpose of a new book[1] for use in teacher training, the author describes the results of the usual courses in psychology as follows:

> Normal-school students have occasionally been more conversant with theories of color-blindness, or with theories of emotion, or with absolute and differential limens of sensitivity or with color zones of the retina, than they have with the fundamental instincts of childhood, or with heredity and euthenics, or with the genesis and growth of the higher thought processes of children [p. xi].

The conception of normal-school psychology upon which his book is based is stated in the following words:

> In a very special sense normal-school psychology must be highly practical, highly workable, and highly understandable. There is no time in our two-year courses for laboratory experimentation, much as we ought to have it, nor for going into theoretical or controversial territory. What we need and must have is a psychology stripped naked of all needless technicalities, disentwined from all irrelevant supposition and theorizing, and articulated as closely as possible with the schoolroom situation. There is no time for incursion into any of the enticing psychological byways, fascinating and suggestive as such inquiry might be. Rather, the psychology of the training school must fashion and temper a practical tool for the hands of the teacher-craftsman [p. x].

Professor Averill's text presents the study of the child in three aspects: (*a*) his original equipments and instincts, (*b*) the processes by means of which he learns, and (*c*) the differences that exist between children. The book is really a series of lessons. Eighteen lessons are devoted to a study of the child's instinctive behavior. Six lessons take up a study of heredity. Some lessons are devoted to such subjects as habit, sensation, perception, attention, imagination, will, and thinking. Six lessons treat the problem of individual differences. At the beginning of each lesson are some topics suggesting things which the student should observe in children in connection with that particular lesson. At the end of each lesson are topics to stimulate further study into the subject of the lesson, with emphasis on those phases of the lesson which are applicable to schoolroom situations. There are also selected references in connection with each lesson.

The text is really an untechnical treatment of child psychology. The form of the book shows thoughtful organization and thorough acquaintance with the subject-matter. The author has accomplished well what he set out to do, that is, to produce a textbook in elementary educational psychology which shall be practical, understandable, and workable. Teachers of educational psychology in normal schools will welcome this text.

[1] LAWRENCE AUGUSTUS AVERILL, *Psychology for Normal Schools*. Boston: Houghton Mifflin Co., 1921. Pp. xx+362. $2.25.

Library work as a career.—One of the essential tasks in effective vocational guidance must always be the overcoming of mental blind spots, the opening of the eyes of youth to callings and opportunities for which they may have peculiar aptitude but to the very existence of which they have remained singularly insensitive. The growing number of books which undertake to do this for the different trades and professions are performing a real and indispensable service.

A book[1] by J. H. Friedel, librarian of the National Industrial Conference Board, and editor of *Special Libraries*, undertakes to do for the office of librarian what Don Seitz has done for newspaper work, Gifford Pinchot for forestry, and Richard C. Cabot for medicine. The recent far-reaching work of the American Library Association in army camps and elsewhere, the opening of new channels of service by the library to the community at large, and the development of a technique and methodology rendering librarianship teachable in schools regularly instituted for that purpose have created an unprecedented demand for trained workers in this field. For young women in particular the vocation is one offering real opportunities by way of service and rewards.

The book describes the kinds of libraries for which trained operators are needed and then lists some eighteen institutions now offering regular courses in library science, describing the length of the course offered, the age and educational requirements for admission, cost of tuition and living expenses while in attendance, and name and address of those from whom further information may be had. As an example of what may be expected where entrance examinations are prescribed, the papers from the Library School of the St. Louis Public Library are published in full.

Librarians and others may find useful the list of addresses for the library commissions in each state of the union. The book closes with a brief account of the several national associations of library workers and the annual meetings of these societies.

Industrial history.—In view of the industrial unrest which the world is now experiencing, it is very important that we overcome shallow thinking on economic questions. Our present industrial organization must be viewed in the light of its development. We must learn to recognize the principles which underlie sound economic organization.

One aid to bringing about this needed insight is a study of the history of industry. Miss Osgood has prepared a new book[2] which will be of interest to all who are planning to give courses in industrial history. The book is for use in high-school classes and is intended to furnish material for a five-period course running through an entire year. The discussion begins with the very

[1] J. H. FRIEDEL, *Training for Librarianship*. Philadelphia: J. B. Lippincott Co., 1921. Pp. 224. $1.75.

[2] ELLEN L. OSGOOD, *A History of Industry*. Boston: Ginn & Co., 1921. Pp. vii+430. $1.72.

earliest stages of industry, tracing its development through various periods, and concludes with a chapter on "Industry in the United States since 1865." The following chapter headings indicate the trend of the discussion: "Laying the Foundations of Industry," "The Pastoral State of Industry," "Industry of the City State," "The Economic Empire of the Ancient World," "The Mercantile Period," "The Industrial Revolution," "Handicraft Industry in the Colonies," "Industrial Revolution in the United States." Each chapter concludes with a bibliography and topics for discussion.

The style and subject-matter of the book make it well adapted for use in high-school classes. The material it furnishes should serve well as an introduction to a course in economics, with more direct application to present-day problems.

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

COURTIS, S. A., and SHAW, LENA S. *Courtis Standard Practice Tests in Handwriting.* Yonkers-on-Hudson, New York: World Book Co., 1921.

FINNEY, ROSS L. *The American Public School.* New York: Macmillan Co., 1921. Pp. xiv+335.

GOODLANDER, MABEL R. *Education through Experience.* New York: Bureau of Educational Experiments, 1921. Pp. 36. $0.35.

O'BRIEN, JOHN ANTHONY. *Silent Reading.* New York: Macmillan Co., 1921. Pp. xvii+289.

O'SHEA, M. V. *Mental Development and Education.* New York: Macmillan Co., 1921. Pp. xvii+403.

STEVENSON, JOHN ALFORD. *The Project Method of Teaching.* New York: Macmillan Co., 1921. Pp. xvi+305.

TRYON, ROLLA MILTON. *The Teaching of History in Junior and Senior High Schools.* Boston: Ginn & Co., 1921. Pp. v+294. $1.48.

WAGNER, CHARLES A. *Common Sense in School Supervision.* Milwaukee: Bruce Publishing Co., 1921. Pp. 204. $1.30.

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BOOKS PRIMARILY FOR HIGH-SCHOOL TEACHERS AND PUPILS

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